

EXHIBIT 1

REDACTED VERSION

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Page 1

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE OPTICAL DISK DRIVE)

PRODUCTS ANTITRUST)

LITIGATION)

-----) No. 3:10-md-2143

) RS

This document relates to:)

ALL INDIRECT PURCHASER)

ACTIONS)

_____)

CONFIDENTIAL RESTRICTED
VIDEOTAPED DEPOSITION OF SHANG HAO CHEN
Taipei, Taiwan
Monday, November 18, 2013

Reported by:

PATRICIA A. BIDONDE, RPR

JOB #: 114043

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<p style="text-align: right;">Page 2</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6 November 18, 2013</p> <p>7 9:03 a.m.</p> <p>8</p> <p>9</p> <p>10 Confidential Restricted</p> <p>11 Videotaped Deposition of Shang Hao Chen,</p> <p>12 held at the Grand Hyatt Hotel, Taipei,</p> <p>13 Taiwan, before Patricia A. Bidonde, a</p> <p>14 Registered Professional Reporter and</p> <p>15 Notary Public of the State of New York.</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 4</p> <p>1</p> <p>2 A P P E A R A N C E S: (Cont'd)</p> <p>3</p> <p>4 BOIES, SCHILLER & FLEXNER, LLP</p> <p>5 Attorneys for Sony Corporation, Sony Optiarc</p> <p>6 America, Inc. and Sony Optiarc, Inc.</p> <p>7 1999 Harrison Street</p> <p>8 Suite 900</p> <p>9 Oakland, California 94612</p> <p>10 BY: BEKO O. REBLITZ-RICHARDSON, ESQ.</p> <p>11 (via telephone)</p> <p>12 (510) 874-1000</p> <p>13</p> <p>14 ALSTON & BIRD, LLP</p> <p>15 Attorneys for Dell, Inc. and Dell Products,</p> <p>16 L.P.</p> <p>17 One Atlantic Center</p> <p>18 1201 West Peachtree Street</p> <p>19 Atlanta, Georgia 30309-3242</p> <p>20 BY: KATIE CHILDERS, ESQ.</p> <p>21 (via telephone)</p> <p>22 (404) 881-7000</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 3</p> <p>1</p> <p>2 A P P E A R A N C E S:</p> <p>3</p> <p>4 HAGENS, BERMAN, SOBOL, SHAPIRO</p> <p>5 Attorneys for Indirect Purchaser Plaintiffs</p> <p>6 715 Hearst Avenue</p> <p>7 Suite 202</p> <p>8 Berkeley, California 94710</p> <p>9 BY: SHANA E. SCARLETT, ESQ.</p> <p>10 (via telephone)</p> <p>11 (510) 725-3000</p> <p>12</p> <p>13 SAVERI & SAVERI, INC.</p> <p>14 Attorneys for Chairman of the Committee of</p> <p>15 Direct Purchaser Plaintiffs</p> <p>16 706 Sansome Street</p> <p>17 San Francisco, California 94111</p> <p>18 BY: CADIO ZIRPOLI, ESQ.</p> <p>19 (via telephone)</p> <p>20 (415) 217-6810</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 5</p> <p>1</p> <p>2 A P P E A R A N C E S: (Cont'd)</p> <p>3</p> <p>4 VINSON & ELKINS, LLP</p> <p>5 Attorneys for Hitachi, LTD.</p> <p>6 2200 Pennsylvania Avenue NW</p> <p>7 Suite 500 West</p> <p>8 Washington, D.C. 20037-1701</p> <p>9 BY: DENNIS S. SCHMELZER, ESQ.</p> <p>10 (via telephone)</p> <p>11 (202) 639-6553</p> <p>12</p> <p>13 LATHAM & WATKINS, LLP</p> <p>14 Attorneys for Toshiba Corporation, Toshiba</p> <p>15 Samsung Storage Technologies Corporation,</p> <p>16 Toshiba Samsung Storage Technologies</p> <p>17 Corporation Korea, and TAIS</p> <p>18 505 Montgomery Street</p> <p>19 Suite 1900</p> <p>20 San Francisco, California 94111</p> <p>21 BY: JOHN E. PELLEGRINI, ESQ.</p> <p>22 (via telephone)</p> <p>23 (415) 395-8240</p> <p>24</p> <p>25</p>

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<p>1 2 A P P E A R A N C E S: (Cont'd) 3 NOVAK DRUCE CONNOLLY BOVE & QUIGG LLP 4 Attorneys for the Quanta entities 5 1007 North Orange Street 6 Ninth Floor 7 Wilmington, Delaware 19801 8 BY: KEITH A. WALTER, JR., ESQ. 9 CURT M. LAMBERT, ESQ. 10 (via telephone) 11 (302) 658-9141 12 13 ASIA LAW FOREIGN LEGAL AFFAIRS LAW FIRM 14 Attorneys for Witness 15 17F, Suite B, No. 167 16 Dunhua North Road 17 Taipei 10549, Taiwan 18 BY: CHRISTOPHER M. NEUMEYER, ESQ. 19 886-2 2717-1999 20 21 ALSO PRESENT: 22 JOSEPH TSENG, Mandarin Interpreter 23 CHRISTIAN BIDONDE, Videographer 24 25</p>	<p>1 2 P R O C E E D I N G S 3 THE VIDEOGRAPHER: This is the 4 videotaped deposition of Shang Hao Chen 5 in the matter of In Re Optical Disk 6 Drive, filed in United States District 7 Court, North American District of 8 California, San Francisco Division; Case 9 number 3:10-MD-2143 RS. 10 This deposition is being held at 11 the Grand Hyatt Taipei, Taiwan, on 12 November 18, 2013. My name is Chris 13 Bidonde, from US Legal Support, and I'm 14 the video specialist. The court 15 reporter today is Patricia Bidonde, also 16 from US Legal Support. Going on the 17 record at 9:03 a.m., Taipei time. 18 Counsel now state their 19 appearances for the record. 20 MS. SCARLETT: This is Shana 21 Scarlett, from Hagens, Berman, Sobol & 22 Shapiro, for the Indirect Purchaser 23 plaintiffs. 24 MR. ZIRPOLI: This is Cadio 25 Zirpoli, from Saveri & Saveri, on behalf</p>
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<p>1 2 IT IS HEREBY STIPULATED AND 3 AGREED, by and between the attorneys for 4 the respective parties herein, that 5 filing and sealing be and the same are 6 hereby waived. IT IS FURTHER STIPULATED 7 AND AGREED that all objections, except 8 as to the form of the question, shall be 9 reserved to the time of the trial. 10 IT IS FURTHER STIPULATED AND 11 AGREED that the within deposition may be 12 sworn to and signed before any officer 13 authorized to administer an oath, with 14 the same force and effect as if signed 15 and sworn to before the Court. 16 17 18 19 20 21 22 23 24 25</p>	<p>1 2 of the Direct Purchaser plaintiffs. 3 MR. WALTER: Keith Walter from 4 Novak, Druce, Connolly, Bove & Quigg, on 5 behalf of the Quanta entities, and I 6 also have with me my colleague, Curt 7 Lambert. 8 This is Katie Childers, of Alston 9 & Bird, on behalf of plaintiffs Dell 10 Inc. and Dell Products, L.P. 11 MR. SCHMELZER: Dennis Schmelzer, 12 from Vinson & Elkins, on behalf of 13 Hitachi, LTD. 14 MR. REBLITZ-RICHARDSON: Beko 15 Reblitz-Richardson, of Bois, Schiller & 16 Flexner, on behalf of the Sony 17 defendants. 18 MR. PELLEGRINI: John Pellegrini, 19 of Latham & Watkins, on behalf of TSSTK, 20 TSSC, Toshiba Corp., and TAIS. 21 MR. NEUMEYER: Chris Neumeyer 22 with Asia Law, representing the witness. 23 THE VIDEOGRAPHER: Will the court 24 reporter please swear in the witness and 25 the interpreter.</p>

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<p style="text-align: right;">Page 10</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 J O S E P H T S E N G, was duly sworn by a</p> <p>3 Notary Public to interpret the</p> <p>4 questions from English into Mandarin,</p> <p>5 and the answers from Mandarin into</p> <p>6 English.</p> <p>7 S H A N G H A O C H E N, called as a</p> <p>8 witness, having been duly sworn by a</p> <p>9 Notary Public, was examined and</p> <p>10 testified through the official</p> <p>11 interpreter as follows:</p> <p>12 THE VIDEOGRAPHER: We're on the</p> <p>13 record. You may proceed.</p> <p>14 MS. SCARLETT: This is Shana</p> <p>15 Scarlett, from Hagens, Berman. For the</p> <p>16 court reporter's benefit, I just want</p> <p>17 the record to reflect that there's a</p> <p>18 stipulation and court order in place</p> <p>19 that an objection by one party is an</p> <p>20 objection by all.</p> <p>21 And so if there are multiple</p> <p>22 objections by counsel, the court</p> <p>23 reporter need not capture them all on</p> <p>24 the record. It would be sufficient just</p> <p>25 to have one objection as to form.</p>	<p style="text-align: right;">Page 12</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 virtue of that invocation, the</p> <p>3 plaintiffs would need to meet each, meet</p> <p>4 the requirements for an adverse</p> <p>5 inference with respect to each question</p> <p>6 and invocation.</p> <p>7 And then finally, we also have</p> <p>8 a -- we'd like to have a standing</p> <p>9 objection to the use of any PLDS or HLDS</p> <p>10 documents or language from the documents</p> <p>11 or translations of those documents that</p> <p>12 you use to seek an adverse inference.</p> <p>13 MR. ZIRPOLI: This is Cadio</p> <p>14 Zirpoli for the Direct Purchaser</p> <p>15 plaintiffs.</p> <p>16 We have protocols in place in</p> <p>17 this case with respect to the use of</p> <p>18 foreign-language documents.</p> <p>19 We are complying with the orders</p> <p>20 in this case, and I don't see why it's</p> <p>21 appropriate here to try and invoke a</p> <p>22 standing objection when there's a court</p> <p>23 order which addresses these issues.</p> <p>24 So to the extent you're trying to</p> <p>25 circumvent any court order with respect</p>
<p style="text-align: right;">Page 11</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 EXAMINATION BY</p> <p>3 MS. SCARLETT:</p> <p>4 Q. Good morning. Could you please</p> <p>5 state your name for the record.</p> <p>6 MR. WALTER: Ms. Scarlett, this</p> <p>7 is Keith Walter. Before you begin, I</p> <p>8 just had a couple of standing objections</p> <p>9 I'd like to put on the record, just to</p> <p>10 make things, hopefully, more efficient.</p> <p>11 MS. SCARLETT: Go ahead.</p> <p>12 MR. WALTER: The first one is to</p> <p>13 the translation. We would just have a</p> <p>14 standing objection to the translation</p> <p>15 that you plan to use today.</p> <p>16 And the second is if the witness</p> <p>17 invokes his Fifth Amendment right. And</p> <p>18 to the extent that the witness does</p> <p>19 invoke his Fifth Amendment Right, our</p> <p>20 position is that each invocation is a</p> <p>21 separate assertion of his Fifth</p> <p>22 Amendment rights.</p> <p>23 And it would be our position that</p> <p>24 to the extent the plaintiffs would seek</p> <p>25 to establish an adverse inference by</p>	<p style="text-align: right;">Page 13</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 to those, we are not stipulating to any</p> <p>3 type of standing objection on</p> <p>4 foreign-language documents or the use of</p> <p>5 foreign-language documents.</p> <p>6 MR. WALTER: All right. So I</p> <p>7 guess I will have to object on the</p> <p>8 piecemeal fact. And I was hoping to</p> <p>9 expedite. But if that's not what you</p> <p>10 want to do here, then we'll just have to</p> <p>11 do piecemeal objections.</p> <p>12 MS. SCARLETT: Well, Keith, you</p> <p>13 know you're entitled to object to form.</p> <p>14 And there's no speaking objections on</p> <p>15 the record. So as long as you keep that</p> <p>16 in mind.</p> <p>17 MR. WALTER: Then my objection to</p> <p>18 form, I want to make clear, would also</p> <p>19 encompass my objection on using the</p> <p>20 translation, as I just -- as I just</p> <p>21 articulated.</p> <p>22 And I also want to make clear on</p> <p>23 the record too that my understanding</p> <p>24 there is an agreed-upon stipulation that</p> <p>25 all objections are reserved, except for</p>

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<p style="text-align: right;">Page 14</p> <p>1 S. Chen - Confidential Restricted 2 objection to form. 3 MS. SCARLETT: We have no such 4 agreement. I mean, the Federal Rules of 5 Civil Procedure are what they are. But 6 we've made no separate agreements. 7 Okay. Could the witness -- 8 MR. NEUMEYER: I'm sorry, before 9 we get started, this is Chris Neumeyer. 10 To simplify matters, it's my 11 understanding that the witness will be 12 invoking his Fifth Amendment rights 13 repeatedly. 14 And so I was hoping that we could 15 come up with some shorthand language to 16 represent a longer phrase so it won't be 17 necessary for the witness and the 18 interpreter to repeat so many words over 19 and over. 20 So here is the language that my 21 client, when he asserts his Fifth 22 Amendment rights, he would like to 23 state: "On advice of my counsel, I 24 invoke my Fifth Amendment rights under 25 the US Constitution and decline to</p>	<p style="text-align: right;">Page 16</p> <p>1 S. Chen - Confidential Restricted 2 Fifth Amendment rights. I've certainly 3 seen much longer invocations. 4 MR. NEUMEYER: Okay. Well, in 5 that case, I guess in English that's 6 what -- the witness will be testifying 7 in Mandarin, so I guess the witness and 8 the interpreter will need to figure out 9 how to state that in Mandarin then, 10 because the English translation is going 11 to come out to that. 12 So can we take a break for a 13 moment for the witness and the 14 interpreter to discuss what's the 15 Mandarin translation of that? 16 MS. SCARLETT: Yeah, that's fine. 17 MR. NEUMEYER: Thank you. 18 THE VIDEOGRAPHER: The time now 19 is 9:10 a.m. We're going off the video 20 record. 21 (Recess taken from 9:10 a.m. to 22 9:12 a.m.) 23 THE VIDEOGRAPHER: The time is 24 now 9:12 a.m. We're back on the record. 25 MS. SCARLETT: Is there anything</p>
<p style="text-align: right;">Page 15</p> <p>1 S. Chen - Confidential Restricted 2 answer." 3 So instead of saying all of those 4 words, we're hoping that he can simply 5 state in Chinese the equivalent of 6 "Fifth Amendment, refuse to answer," and 7 then the interpreter would translate 8 that "Fifth Amendment, refuse to 9 answer." 10 Is that fair enough? 11 MS. SCARLETT: I think that we 12 would prefer, much as the other 13 deponents have, as the "On advice of my 14 counsel, I invoke my Fifth Amendment 15 rights under the US Constitution and 16 decline to answer." 17 It sounds a little confusing when 18 it's only two short phrases. 19 MR. NEUMEYER: Even though we put 20 a stipulation on the record right up 21 front that that's what it means? 22 MS. SCARLETT: From my 23 perspective, that one sentence that you 24 have initially stated and we disagreed 25 with, that is a shortened invocation of</p>	<p style="text-align: right;">Page 17</p> <p>1 S. Chen - Confidential Restricted 2 else that we need to clear up before we 3 start our questions? 4 No. Okay. Good. 5 BY MS. SCARLETT: 6 Q. Could the witness please state 7 his name for the record. 8 A. Shang Hao Chen. 9 MS. SCARLETT: Actually, now that 10 we're hearing it, is there any way to 11 turn the volume up on your end? The 12 witness is very vague. 13 BY MS. SCARLETT: 14 Q. Mr. Chen, do you go by any other 15 name, other than Shang Hao Chen? 16 MR. WALTER: Objection; form. 17 A. On the advice of my counsel, I 18 invoke my Fifth Amendment rights under the US 19 Constitution and decline to answer. 20 Q. Are you also known as Haw Chen? 21 MR. WALTER: This is Keith 22 Walter. Objection to form. 23 A. On the advice of my counsel, I 24 invoke my Fifth Amendment rights under the US 25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 18</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. Could you please state your home</p> <p>3 address.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Are you employed by Quanta</p> <p>8 Storage, Inc.?</p> <p>9 MR. WALTER: Objection; Form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Have you ever been employed by</p> <p>14 Quanta Storage, Inc., from at least 2004 to</p> <p>15 the present?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On the advice of my counsel, I</p> <p>18 invoke my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Do you understand that you are</p> <p>21 testifying under oath here today, just as if</p> <p>22 you were testifying in a court of law?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 20</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Do you understand that this</p> <p>7 lawsuit was brought by purchasers of Optical</p> <p>8 Disk Drive and products containing optical</p> <p>9 disk drives?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Do you understand that the</p> <p>15 plaintiffs contend defendants, including QSI,</p> <p>16 illegally conspired to stabilize the price of</p> <p>17 optical disk drives from 2004 to 2009?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Do you speak English, sir?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 19</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Do you understand that being</p> <p>4 under oath means that you're obligated by law</p> <p>5 to tell the truth?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On the advice of my counsel, I</p> <p>8 invoke my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Do you understand that you're</p> <p>11 here today regarding an antitrust lawsuit in</p> <p>12 which Quanta Storage, Inc. is one of the</p> <p>13 defendants?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On the advice of my counsel, I</p> <p>16 invoke my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Quanta Storage, Inc. is also</p> <p>19 known as QSI. Correct?</p> <p>20 MR. WALTER: Objection.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Quanta Storage, Inc. is also</p> <p>25 known as Quanta. Correct?</p>	<p style="text-align: right;">Page 21</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And do you understand spoken</p> <p>3 English?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Sir, do you read English?</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And, sir, do you write in</p> <p>13 English?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Have you ever spoken to QSI's</p> <p>19 customers in English?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Have you ever written to QSI's</p> <p>25 customers in English?</p>

6 (Pages 18 to 21)

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<p style="text-align: right;">Page 22</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Do you understand that your</p> <p>6 testimony today could be read or shown to the</p> <p>7 judge or the jury in this case?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 Q. You're making a choice here today</p> <p>10 to assert your Fifth Amendment protections.</p> <p>11 Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Do you understand that the Fifth</p> <p>17 Amendment to the United States Constitution</p> <p>18 allows a witness to refuse to provide</p> <p>19 testimony that may provide evidence that could</p> <p>20 be used in criminal proceedings against that</p> <p>21 witness?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 24</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. Have you had an opportunity to</p> <p>3 speak with your lawyer about the potential</p> <p>4 effects of asserting the Fifth Amendment in</p> <p>5 your deposition?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Sir, is your employer, QSI,</p> <p>11 paying Mr. Neumeyer to represent you today?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Sir, if you continue to assert</p> <p>17 the Fifth Amendment today, is it fair for the</p> <p>18 judge and the jury to presume that you've had</p> <p>19 every opportunity to consider your choice?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 MS. SCARLETT: I'd like to have</p> <p>25 the court reporter provide the witness</p>
<p style="text-align: right;">Page 23</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. Are you on any medications that</p> <p>3 would impair your ability to testify today to</p> <p>4 the best of your ability?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Do you understand that your</p> <p>10 testimony today may be used against QSI and</p> <p>11 other defendants in this lawsuit?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Do you understand that when you</p> <p>17 refuse to answer a question because of your</p> <p>18 constitutional protections, it's possible that</p> <p>19 the judge and jury may use that choice against</p> <p>20 QSI and presume that the testimony you might</p> <p>21 have given here would be bad for QSI?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 25</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 with Exhibit 356, please.</p> <p>3 Q. These are Quanta Storage's First</p> <p>4 Amended Objections and Responses to the</p> <p>5 Indirect Purchaser Plaintiffs' First Set of</p> <p>6 Interrogatories to Defendants. Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 (Plaintiffs' Exhibit 356, Quanta</p> <p>9 Storage's First Amended Objections and</p> <p>10 Responses to the Indirect Purchaser</p> <p>11 Plaintiffs' First Set of Interrogatories</p> <p>12 to Defendants, marked for</p> <p>13 identification, as of this date.)</p> <p>14 MR. ZIRPOLI: This is Cadio. Can</p> <p>15 you please explain your objection there?</p> <p>16 MR. WALTER: Again please?</p> <p>17 MR. ZIRPOLI: Could you please</p> <p>18 explain your objection.</p> <p>19 MR. WALTER: Yes. My objection</p> <p>20 is that's vague. And he's not -- he</p> <p>21 doesn't know -- he doesn't necessarily</p> <p>22 know what an interrogatory response is</p> <p>23 or anything like that. So that's my</p> <p>24 objection.</p> <p>25 MR. ZIRPOLI: Other than that he</p>

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<p style="text-align: right;">Page 26</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 verified these?</p> <p>3 MR. WALTER: It's vague and it's</p> <p>4 unfair.</p> <p>5 MR. ZIRPOLI: Okay.</p> <p>6 MS. SCARLETT: Could I have the</p> <p>7 witness answer the question, please?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. Turn to the last page of this</p> <p>12 exhibit, please, sir.</p> <p>13 You signed these responses under</p> <p>14 penalty of perjury under the laws of the</p> <p>15 United States of America on August 10, 2012.</p> <p>16 Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Do you understand, sir, that</p> <p>22 under the laws of the United States, perjury</p> <p>23 could lead to a maximum prison sentence of</p> <p>24 five years for each violation?</p> <p>25 MR. WALTER: Objection; form.</p>	<p style="text-align: right;">Page 28</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And this statement was untrue</p> <p>5 when you verified these responses on August</p> <p>6 10, 2012. Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And, sir, this statement is</p> <p>12 untrue today, isn't it?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. You are aware, sir, that other</p> <p>18 defendants in this case have testified that</p> <p>19 they reached agreement with Quanta Storage on</p> <p>20 the pricing of optical disk drives, aren't</p> <p>21 you?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 27</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Could you turn to page 5 of the</p> <p>6 exhibit, please.</p> <p>7 In these discovery requests,</p> <p>8 plaintiffs asked that QSI identify each actual</p> <p>9 or proposed or discussed agreement between you</p> <p>10 and any producer of ODDs and ODD products</p> <p>11 related to prices, production output, and/or</p> <p>12 inventory levels, and order of action</p> <p>13 finishing place during the relevant time</p> <p>14 period. Correct?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Quanta Storage, Inc. responded,</p> <p>20 "Other than agreements between QSI and its</p> <p>21 customers, which refer to a contract price or</p> <p>22 ODD, QSI is not aware of any such agreement."</p> <p>23 Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 29</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. For example, sir, are you aware</p> <p>3 that PLDS testified that you personally</p> <p>4 reached an agreement with Jerry Hsieh of PLDS</p> <p>5 for a Dell auction for 12.7 millimeter SATA</p> <p>6 slot DVD read-write drives, held on December</p> <p>7 1, 2008?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 MS. SCARLETT: Would the</p> <p>10 interpreter like me to read the question</p> <p>11 again?</p> <p>12 THE INTERPRETER: Yes, please.</p> <p>13 Please repeat your question.</p> <p>14 Q. Are you aware that PLDS testified</p> <p>15 that you personally reached an agreement with</p> <p>16 Jerry Hsieh -- for the court reporter's</p> <p>17 benefit, that's H-s-i-e-h -- of PLDS, for a</p> <p>18 Dell auction for 12.7 millimeter SATA slot DVD</p> <p>19 read-write drives held on December 1, 2008?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 MS. SCARLETT: Could the court</p> <p>25 reporter please give the witness Exhibit</p>

8 (Pages 26 to 29)

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<p style="text-align: right;">Page 30</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 357.</p> <p>3 (Plaintiffs' Exhibit 357, PLDS's</p> <p>4 responses to plaintiff's</p> <p>5 interrogatories, marked for</p> <p>6 identification, as of this date.)</p> <p>7 MS. SCARLETT: Could the witness</p> <p>8 please turn to page 6 of this exhibit.</p> <p>9 MR. WALTER: Ms. Scarlett, for</p> <p>10 the record, the documents that you gave</p> <p>11 us in advance don't have -- at least my</p> <p>12 copies don't -- have exhibit numbers.</p> <p>13 So could you please identify,</p> <p>14 when you're referring to exhibit number,</p> <p>15 what the title of the document is or</p> <p>16 identify it by Bates numbers, please.</p> <p>17 MS. SCARLETT: Sure. This is</p> <p>18 Philips and Lite-ON Digital Solution</p> <p>19 Corporation and then Solutions USA</p> <p>20 Second Supplemental Response to Indirect</p> <p>21 Purchaser's First Set of</p> <p>22 Interrogatories.</p> <p>23 THE COURT REPORTER: I'm sorry,</p> <p>24 can you repeat that.</p> <p>25 MS. SCARLETT: For shorthand,</p>	<p style="text-align: right;">Page 32</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 the 2004 to 2009 time period. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 MS. SCARLETT: I'd like the</p> <p>8 witness to turn to page 4 of Exhibit</p> <p>9 356, which, for those on the phone, is</p> <p>10 Quanta Storage First Amended Objections</p> <p>11 and Responses to the Indirect</p> <p>12 Purchaser's Interrogatories.</p> <p>13 Q. And is it correct, sir, that in</p> <p>14 response to Interrogatory Number 2, Quanta</p> <p>15 Storage identified you as a managerial-level</p> <p>16 person with responsibilities for pricing.</p> <p>17 Correct?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And from at least June 2007 to</p> <p>22 2008, you were the associated vice president</p> <p>23 of sales for the optical storage business</p> <p>24 unit. Correct?</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 31</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 this is PLDS's responses to plaintiff's</p> <p>3 interrogatories.</p> <p>4 THE COURT REPORTER: Thank you.</p> <p>5 Q. And, sir, near the bottom of the</p> <p>6 page, PLDS has written, "Prior to the slot</p> <p>7 auction that afternoon, Jerry Hsieh phoned Haw</p> <p>8 Chen, AKA his counterpart at QSI. Mr. Hsieh</p> <p>9 placed his call from Taiwan. The two reached</p> <p>10 an agreement whereby PLDS would bid a certain</p> <p>11 price and allow QSI to win the third-place</p> <p>12 slot."</p> <p>13 Do you see that, sir?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Did you, sir, reach this</p> <p>19 agreement with PLDS?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. You were one of the people at QSI</p> <p>25 with authority over pricing for ODDs during</p>	<p style="text-align: right;">Page 33</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. From July 2008 to the present,</p> <p>5 you were the general manager and vice</p> <p>6 president of the optical storage business unit</p> <p>7 of Quanta Storage. Correct?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 MS. SCARLETT: Could the court</p> <p>12 reporter please provide the witness with</p> <p>13 Exhibit 358.</p> <p>14 (Plaintiffs' Exhibit 358,</p> <p>15 Document Bates-numbered Q297534, marked</p> <p>16 for identification, as of this date.)</p> <p>17 MS. SCARLETT: For those on the</p> <p>18 phone, this is a document Bates-numbered</p> <p>19 Q297534.</p> <p>20 Q. While you were associated -- I'm</p> <p>21 sorry -- while you were associated vice</p> <p>22 president of sales for the optical storage</p> <p>23 business unit, you reported to the president</p> <p>24 of QSI, Shi-chi Ho. Correct?</p> <p>25 MR. WALTER: Objection; form.</p>

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<p style="text-align: right;">Page 34</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. In May 2007, you were also the</p> <p>6 acting sales project manager. Correct?</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. The QSI sales organization all</p> <p>11 reported to you in your position as associated</p> <p>12 vice president of sales for the optical</p> <p>13 storage business unit. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: Could the court</p> <p>19 reporter please provide the witness with</p> <p>20 Exhibit 359.</p> <p>21 (Plaintiffs' Exhibit 359,</p> <p>22 Document Bates-numbered Q297534, marked</p> <p>23 for identification, as of this date.)</p> <p>24 MS. SCARLETT: This is a document</p> <p>25 Bates-numbered Q297534.</p>	<p style="text-align: right;">Page 36</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 MS. SCARLETT: Could the court</p> <p>7 reporter please provide the witness with</p> <p>8 Exhibit 360 and 360-A, which is a</p> <p>9 document Bates-numbered</p> <p>10 Quanta_HAW_00101237 PCT.</p> <p>11 And the foreign-language document</p> <p>12 should be Number 360, and the</p> <p>13 plaintiffs' certified translation as</p> <p>14 360-A.</p> <p>15 (Plaintiffs' Exhibit 360,</p> <p>16 Document Bates-numbered</p> <p>17 Quanta_HAW_00101237, marked for</p> <p>18 identification, as of this date.)</p> <p>19 (Plaintiffs' Exhibit 360-A,</p> <p>20 English translation of Exhibit 360,</p> <p>21 marked for identification, as of this</p> <p>22 date.)</p> <p>23 Q. And I apologize, the document</p> <p>24 doesn't have page numbers, but could the</p> <p>25 witness please turn to page 23, a page that is</p>
<p style="text-align: right;">Page 35</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. While you were the general</p> <p>3 manager and vice president of the optical</p> <p>4 storage business unit of Quanta Storage, the</p> <p>5 sales organization reported to you. Correct?</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And while you were the general</p> <p>10 manager and vice president of the optical</p> <p>11 storage business unit of Quanta Storage, you</p> <p>12 reported to the president of QSI, Shi-chi Ho.</p> <p>13 Correct?</p> <p>14 A. On the advice of my counsel, I</p> <p>15 invoke my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. From 2004 to 2009, you considered</p> <p>18 HLDS a competitor. Correct?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On the advice of my counsel, I</p> <p>21 invoke my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. You listed HLDS as a competitor</p> <p>24 in Quanta Storage planning documents.</p> <p>25 Correct?</p>	<p style="text-align: right;">Page 37</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 entitled "Competitor Roadmap Review?"</p> <p>3 For 2004 to 2009, you considered</p> <p>4 Panasonic a competitor. Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You listed Panasonic as a</p> <p>9 competitor in Quanta Storage planning</p> <p>10 documents. Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. From 2004 through 2009, you</p> <p>15 considered TSST a competitor. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. You listed TSST as a competitor</p> <p>21 in QSI planning documents. Correct?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 38</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. From 2004 through 2009, you</p> <p>3 considered Lite-ON a competitor. Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You listed Lite-ON as a</p> <p>9 competitor in QSI planning documents.</p> <p>10 Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. From 2004 to at least 2006, you</p> <p>15 considered NEC a competitor. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And you listed NEC as a</p> <p>21 competitor in Quanta Storage planning</p> <p>22 documents. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 40</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MS. SCARLETT: Is the document</p> <p>3 entitled "Marketing Review"?</p> <p>4 THE COURT REPORTER: Okay. Yes.</p> <p>5 I see. You said that number 18063,</p> <p>6 that's under the doc ID?</p> <p>7 MS. SCARLETT: Yes.</p> <p>8 THE COURT REPORTER: Okay.</p> <p>9 Because that's not what the running</p> <p>10 header says, but obviously it is the</p> <p>11 right one. Okay.</p> <p>12 BY MS. SCARLETT:</p> <p>13 Q. Page 29 should say "Competitor</p> <p>14 Roadmap."</p> <p>15 This document lists companies</p> <p>16 that you consider competitors. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Could the witness</p> <p>22 please turn to page 44 of the exhibit,</p> <p>23 which is a TEAC roadmap.</p> <p>24 Q. From 2004 to 2009, you considered</p> <p>25 TEAC to be a competitor. Correct, sir?</p>
<p style="text-align: right;">Page 39</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: Could the court</p> <p>4 reporter please provide the witness with</p> <p>5 Exhibit 361, a document Bates-numbered</p> <p>6 Quanta_HAW_18063.</p> <p>7 (Exhibit 361, Document</p> <p>8 Bates-numbered Quanta_HAW_18063, marked</p> <p>9 for identification, as of this date.)</p> <p>10 MS. SCARLETT: Again, I'm</p> <p>11 apologizing that the document isn't</p> <p>12 numbered, but that's how it was produced</p> <p>13 to us. but if the witness can turn to</p> <p>14 page 29 of this exhibit.</p> <p>15 THE COURT REPORTER: This is the</p> <p>16 court reporter. The document that I</p> <p>17 have as 361 does not have any Bates</p> <p>18 numbers on it. So I'm not sure if it's</p> <p>19 the proper one.</p> <p>20 MS. SCARLETT: The Bates number</p> <p>21 is on the metadata sheet. That is the</p> <p>22 very last page. And under doc ID, it</p> <p>23 reflects the number that I'm using:</p> <p>24 Quanta_HAW_18063.</p> <p>25 THE COURT REPORTER: No.</p>	<p style="text-align: right;">Page 41</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. You listed TEAC as a competitor</p> <p>7 in QSI planning documents. Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 MS. SCARLETT: Could the witness</p> <p>13 turn to page 49 of the exhibit, which is</p> <p>14 a PLDS roadmap.</p> <p>15 Q. From 2004 to 2009, you considered</p> <p>16 PLDS to be a competitor. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. You listed PLDS as a competitor</p> <p>22 in QSI planning documents. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 42</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: And could the</p> <p>4 witness turn to the next page of this</p> <p>5 document, page 50.</p> <p>6 Q. From 2004 to 2009, you considered</p> <p>7 Pioneer to be a competitor. Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. You listed Pioneer as a</p> <p>13 competitor in QSI planning documents.</p> <p>14 Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: Could the court</p> <p>19 reporter please provide the witness with</p> <p>20 Exhibit 362, a document Bates-numbered</p> <p>21 Q230389.</p> <p>22 (Plaintiffs' Exhibit 362,</p> <p>23 Document Bates-numbered Q230389, marked</p> <p>24 for identification, as of this date.)</p> <p>25 A. (Document review.)</p>	<p style="text-align: right;">Page 44</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 and 2009, you cooperated with your</p> <p>3 competitors, don't you?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And you cooperated with your</p> <p>9 competitors by providing them information</p> <p>10 about QSI that was not public information.</p> <p>11 Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. You and other QSI employees</p> <p>17 provided your competitors nonpublic</p> <p>18 information about QSI's prices, sales volume,</p> <p>19 past and future demand, cost, quality, and</p> <p>20 capacity. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. The reason you provided this</p>
<p style="text-align: right;">Page 43</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. On or around November 1, 2006,</p> <p>3 QSI entered into a manufacturing relationship</p> <p>4 with Sony NEC Optiarc. Correct?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 THE COURT REPORTER: I'm sorry,</p> <p>7 could you repeat the question? I was</p> <p>8 still handing him the document when you</p> <p>9 started the question.</p> <p>10 MS. SCARLETT: My apologies.</p> <p>11 Q. On or around November 1, 2006,</p> <p>12 Quanta Storage entered into a manufacturing</p> <p>13 relationship with Sony NEC Optiarc, Inc.</p> <p>14 Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. The Quanta Storage manufacturing</p> <p>19 relationship continued when Sony NEC Optiarc</p> <p>20 become Sony Optiarc. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. You agree, sir, that between 2007</p>	<p style="text-align: right;">Page 45</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 information to your competitors was to help</p> <p>3 your competitors. Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Isn't it true that the reason you</p> <p>9 discussed pricing information with your</p> <p>10 competitors was to achieve the goal of selling</p> <p>11 optical disk drives at higher prices than if</p> <p>12 you didn't provide each other with this</p> <p>13 information?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Isn't it true that you told your</p> <p>19 competitors before sales events, what rates</p> <p>20 QSI wanted to achieve?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And isn't it true that your</p>

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<p style="text-align: right;">Page 46</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 competitors would also tell you what rates</p> <p>3 they wanted to achieve before sales events?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And isn't it true that before</p> <p>9 sales events, you told your competitors what</p> <p>10 prices you anticipated quoting?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And isn't it true before sales</p> <p>16 events, your competitors told you what prices</p> <p>17 they anticipated quoting?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And during sales events that were</p> <p>23 ongoing, you told your competitors what prices</p> <p>24 QSI had just quoted. Correct?</p> <p>25 MR. WALTER: Objection; form.</p>	<p style="text-align: right;">Page 48</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And if a competitor told you that</p> <p>4 they had a limited ability to compete for</p> <p>5 volume, you understood that this would have an</p> <p>6 impact on the price that the competitor would</p> <p>7 bid. Correct?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. So QSI and its competitors would</p> <p>12 tell each other their capacity situation to</p> <p>13 help limit price competition. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And when you and your competitors</p> <p>19 discussed cost information, the purpose of</p> <p>20 doing so was to help each other achieve the</p> <p>21 goal of higher ODD prices. Correct?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 47</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And during sales events that were</p> <p>6 ongoing, your competitors told you what prices</p> <p>7 they had just quoted. Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And isn't it true that the reason</p> <p>13 you had these discussions with your</p> <p>14 competitors was to limit how low prices for</p> <p>15 ODDs were being quoted to your customers?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Isn't it true that sometimes ODD</p> <p>21 sales volumes for a company were limited by</p> <p>22 capacity or quality issues?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 49</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. So if your competitors told you</p> <p>3 that their costs were higher than yours, you</p> <p>4 understood your competitors had less profit</p> <p>5 margin than QSI did. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. This meant that each of you would</p> <p>11 know who was in a better financial position to</p> <p>12 offer a lower price. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. You expected your employees to</p> <p>18 collect information from QSI's competitors.</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. In fact, your employees describe</p> <p>25 contacting their competitors as a part of</p>

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<p style="text-align: right;">Page 50</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 their job duties. Correct?</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. In August 2008, Virginia Lin</p> <p>7 transferred her job duties for the HP account</p> <p>8 to Caroline Lin. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 MS. SCARLETT: Would the court</p> <p>14 reporter please provide the witness with</p> <p>15 Exhibit 363, which is a document</p> <p>16 Bates-numbered Q725951.</p> <p>17 (Plaintiffs' Exhibit 363,</p> <p>18 Document Bates-numbered Q725951, marked</p> <p>19 for identification, as of this date.)</p> <p>20 THE WITNESS: Can we take a</p> <p>21 break?</p> <p>22 MS. SCARLETT: Of course.</p> <p>23 Would everyone like to take a</p> <p>24 15-minute break?</p> <p>25 THE VIDEOGRAPHER: The time now</p>	<p style="text-align: right;">Page 52</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 QSI's competitors. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Specifically, number 2 on her</p> <p>8 list was "contact information including TOP</p> <p>9 and our competitors."</p> <p>10 Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. You routinely approved expense</p> <p>16 reports that included descriptions of your</p> <p>17 employees meeting with competitors. Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 MS. SCARLETT: Could the court</p> <p>23 reporter please provide the witness with</p> <p>24 Exhibit 364 and 364-A, the document</p> <p>25 Bates-numbered Quanta_HAW_61411.</p>
<p style="text-align: right;">Page 51</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 is 10:10 a.m. This concludes Tape 1.</p> <p>3 We're going off the video record.</p> <p>4 (Recess taken from 10:10 a.m. to</p> <p>5 10:25 a.m.)</p> <p>6 THE VIDEOGRAPHER: The time is</p> <p>7 now 10:25 a.m. This begins Tape 2.</p> <p>8 We're back on the record with Shang Hao</p> <p>9 Chen.</p> <p>10 BY MS. SCARLETT:</p> <p>11 Q. Turning to Exhibit 363, is this</p> <p>12 an e-mail from Virginia Lin that you received</p> <p>13 on August 8, 2008, sir?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Is your e-mail address</p> <p>19 haw.chen@qsitw.com, sir?</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. In this e-mail, Virginia Lin</p> <p>24 informs you and others that she has provided</p> <p>25 Caroline Lin with contact information for</p>	<p style="text-align: right;">Page 53</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 (Plaintiffs' Exhibit 364,</p> <p>3 Document Bates-numbered</p> <p>4 Quanta_HAW_61411, marked for</p> <p>5 identification, as of this date.)</p> <p>6 (Plaintiffs' Exhibit 364-A,</p> <p>7 English translation of Exhibit 364,</p> <p>8 marked for identification, as of this</p> <p>9 date.)</p> <p>10 Q. Could the witness turn to the</p> <p>11 sixth page of this exhibit, which is the fifth</p> <p>12 page of the attachment, Quanta_HAW_61411.</p> <p>13 In March 2009, you approved an</p> <p>14 expense report for Caroline Lin where she</p> <p>15 describes having a snack with PLDS J.C.</p> <p>16 Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. In fact, you approved two snacks</p> <p>22 with PLDS J.C. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 54</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And you understood that she meant</p> <p>4 J.C. Lin of PLDS. Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You also claimed expenses from</p> <p>9 OSI for your own meetings with competitors.</p> <p>10 Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 MS. SCARLETT: Could the court</p> <p>16 reporter please provide the witness with</p> <p>17 Exhibit 365 and 365-A, document</p> <p>18 Bates-numbered Q9940.</p> <p>19 (Plaintiffs' Exhibit 365,</p> <p>20 Document Bates-numbered Q9940, marked</p> <p>21 for identification, as of this date.)</p> <p>22 (Plaintiffs' Exhibit 365-A,</p> <p>23 English translation of Exhibit 365,</p> <p>24 marked for identification, as of this</p> <p>25 date.)</p>	<p style="text-align: right;">Page 56</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 date.)</p> <p>3 A. (Document review.)</p> <p>4 Q. In November 2008, you requested</p> <p>5 reimbursement of travel costs to Japan, and</p> <p>6 listed as one of the visiting parties, a</p> <p>7 Pioneer meeting with Usui-san. Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. "Usui-san" was Ken Usui of</p> <p>13 Pioneer. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: I'd like the court</p> <p>19 reporter to provide the witness with</p> <p>20 Exhibit 367 and 367-A, a document</p> <p>21 Bates-numbered Q9997.</p> <p>22 (Plaintiffs' Exhibit 367,</p> <p>23 Document Bates-numbered Q9997, marked</p> <p>24 for identification, as of this date.)</p> <p>25 (Plaintiffs' Exhibit 367-A,</p>
<p style="text-align: right;">Page 55</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. In October 2008, you requested</p> <p>4 reimbursement for an entertainment fee for a</p> <p>5 meeting with Pioneer's Nojiri-san. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And "Nojiri-san" was Sinichi</p> <p>11 Nojiri, of Pioneer. Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 Exhibit 366 and 366-A, a document</p> <p>19 Bates-numbered Q9969.</p> <p>20 (Plaintiffs' Exhibit 366,</p> <p>21 Document Bates-numbered Q9969, marked</p> <p>22 for identification, as of this date.)</p> <p>23 (Plaintiffs' Exhibit 366-A,</p> <p>24 English translation of Exhibit 366,</p> <p>25 marked for identification, as of this</p>	<p style="text-align: right;">Page 57</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 English translation of Exhibit 367,</p> <p>3 marked for identification, as of this</p> <p>4 date.)</p> <p>5 A. (Document review.)</p> <p>6 Q. In December 2008, you requested</p> <p>7 reimbursement of travel costs to Japan, and</p> <p>8 listed as one of the purposes, a meeting with</p> <p>9 PCC. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. PCC is Panasonic. Correct?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 MS. SCARLETT: Could the court</p> <p>20 reporter please provide the witness with</p> <p>21 Exhibit 368 and 368-A, a document</p> <p>22 Bates-numbered Q9994.</p> <p>23 (Plaintiffs' Exhibit 368,</p> <p>24 Document Bates-numbered Q9994, marked</p> <p>25 for identification, as of this date.)</p>

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<p style="text-align: right;">Page 58</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 (Plaintiffs' Exhibit 368-A,</p> <p>3 English translation of Exhibit 368,</p> <p>4 marked for identification, as of this</p> <p>5 date.)</p> <p>6 A. (Document review.)</p> <p>7 Q. In December 2008, you requested</p> <p>8 reimbursement of travel costs to Japan, and</p> <p>9 listed as one of the purposes, a meeting with</p> <p>10 Pioneer. Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 MS. SCARLETT: Would the court</p> <p>16 reporter please provide the witness with</p> <p>17 Exhibit 369 and 369-A, a document</p> <p>18 Bates-numbered Q9994.</p> <p>19 (Plaintiffs' Exhibit 369,</p> <p>20 Document Bates-numbered Q9994, marked</p> <p>21 for identification, as of this date.)</p> <p>22 (Plaintiffs' Exhibit 369-A,</p> <p>23 English translation of Exhibit 369,</p> <p>24 marked for identification, as of this</p> <p>25 date.)</p>	<p style="text-align: right;">Page 60</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Bates-numbered Q10063.</p> <p>3 (Plaintiffs' Exhibit 370,</p> <p>4 Document Bates-numbered Q10063, marked</p> <p>5 for identification, as of this date.)</p> <p>6 (Plaintiffs' Exhibit 370-A,</p> <p>7 English translation of Exhibit 370,</p> <p>8 marked for identification, as of this</p> <p>9 date.)</p> <p>10 A. (Document review.)</p> <p>11 Q. In May 2009, you requested</p> <p>12 reimbursement of travel costs to Japan, and</p> <p>13 listed as one of the purposes, a meeting with</p> <p>14 Nojiri-san from Pioneer. Correct?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And "Nojiri-san" was Sinichi</p> <p>20 Nojiri of Pioneer. Correct?</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. You were aware that meeting with</p> <p>25 your competitors to exchange pricing</p>
<p style="text-align: right;">Page 59</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. In February 2009, you requested</p> <p>4 reimbursement of travel costs to Japan, and</p> <p>5 listed as one of the purposes, a meeting with</p> <p>6 Usui and Nojiri-san from Japan. Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And "Usui" in this document is</p> <p>12 Ken Usui from Pioneer. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And "Nojiri-san" was Sinichi</p> <p>18 Nojiri of Pioneer. Correct?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 MS. SCARLETT: Could the court</p> <p>24 reporter please provide the witness with</p> <p>25 Exhibit 370 and 370-A, a document</p>	<p style="text-align: right;">Page 61</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 information was illegal. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 MS. SCARLETT: Could the court</p> <p>8 reporter please provide the witness with</p> <p>9 Exhibit 371 and 371-A, a document</p> <p>10 Bates-numbered Quanta_HAW_47154.</p> <p>11 (Plaintiffs' Exhibit 371, E-mail</p> <p>12 dated December 17, 2008, from Sally</p> <p>13 Huang to Shang Hao Chen, Bates-numbered</p> <p>14 Quanta_HAW_47154, marked for</p> <p>15 identification, as of this date.)</p> <p>16 (Plaintiffs' Exhibit 371-A,</p> <p>17 English translation of Exhibit 371,</p> <p>18 marked for identification, as of this</p> <p>19 date.)</p> <p>20 A. (Document review.)</p> <p>21 Q. This is an e-mail that you</p> <p>22 received from Sally Huang on December 17,</p> <p>23 2008. Correct?</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

16 (Pages 58 to 61)

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<p style="text-align: right;">Page 62</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. In this e-mail, Sally Huang warns</p> <p>4 QSI employees that they were to not mention</p> <p>5 quotation/price to their competitors.</p> <p>6 Correct?</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. You were aware that QSI employees</p> <p>11 were not to discuss price with their</p> <p>12 competitors. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. Yet, it was common practice at</p> <p>18 QSI to discuss prices with their competitors.</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. During QSI's relationship with</p> <p>25 Sony NEC Optiarc, Optiarc employees often</p>	<p style="text-align: right;">Page 64</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 SOA_COJ_1_1637185.</p> <p>3 (Plaintiffs' Exhibit 372, E-mail</p> <p>4 dated November 2, 2007, from Kris</p> <p>5 Williams to Shang Hao Chen,</p> <p>6 Bates-numbered SOA_COJ_1_1637185, marked</p> <p>7 for identification, as of this date.)</p> <p>8 A. (Document review.)</p> <p>9 Q. This is an e-mail that you</p> <p>10 received on November 2, 2007, from Kris</p> <p>11 Williams. Correct?</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Please turn to the third page of</p> <p>16 this exhibit, the Bates number ending 187.</p> <p>17 Kris Williams of Sony NEC Optiarc</p> <p>18 America informs you that he had spoken with</p> <p>19 HLDS and PLDS to check on information provided</p> <p>20 by Dell. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Specifically, Kris Williams</p>
<p style="text-align: right;">Page 63</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 provided you with information about</p> <p>3 competitors. Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And Sony NEC Optiarc employees</p> <p>9 continued to provide you with information from</p> <p>10 competitors after it changed its name to Sony</p> <p>11 Optiarc. Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. In October 2007, you were aware</p> <p>17 that Optiarc employees were communicating with</p> <p>18 competitors during a Dell auction. Correct?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 MS. SCARLETT: Could the court</p> <p>24 reporter please provide the witness with</p> <p>25 Exhibit 372, a document Bates-numbered</p>	<p style="text-align: right;">Page 65</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 informs you that "HLDS and PLDS confirms that</p> <p>3 Alex is communicating many potential</p> <p>4 aggressive moves from competitors, but many of</p> <p>5 these are not true."</p> <p>6 Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. The "Alex" being referred to here</p> <p>12 was an employee of Dell. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And Kris Williams continued to</p> <p>18 confirm information from competitors during</p> <p>19 this procurement event. Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Please turn to the first page of</p> <p>25 the e-mail.</p>

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<p style="text-align: right;">Page 66</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 On November 2, 2007, Kris</p> <p>3 Williams informed you that he "confirmed that</p> <p>4 TEAC has a native DVD-ROM, and they are</p> <p>5 currently in first position with their bid."</p> <p>6 Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. Quanta Storage employees often</p> <p>12 provided Sony NEC Optiarc employees with</p> <p>13 information about competitors. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And Quanta Storage employees</p> <p>19 often provided Sony Optiarc employees with</p> <p>20 information from competitors. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 MS. SCARLETT: Could the court</p>	<p style="text-align: right;">Page 68</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. Please look at the first page of</p> <p>3 the document, where Ms. Tzeng states, "By the</p> <p>4 way, I had a conversation with PLDS sales</p> <p>5 yesterday."</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 Q. Do you see that, sir?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And PLDS disclosed to Ms. Tzeng</p> <p>12 the current sales volume on the SATA interface</p> <p>13 drives sold to Dell. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Specifically, Ms. Tzeng informed</p> <p>19 you that PLDS said, "The TAM for 12.7 tray</p> <p>20 SATA is just 20 to 30 K/M as of today, and</p> <p>21 don't think that the Project Fleming, the</p> <p>22 reflashed model for the desktop will have 100</p> <p>23 K/M."</p> <p>24 Correct?</p> <p>25 MR. WALTER: Objection; form.</p>
<p style="text-align: right;">Page 67</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 reporter please provide the witness with</p> <p>3 Exhibit 373, a document Bates-numbered</p> <p>4 2254640.</p> <p>5 (Plaintiffs' Exhibit 373, E-mail</p> <p>6 dated March 2008 from Shu-ming Tzeng to</p> <p>7 Shang Hao Chen, Bates-numbered 2254640,</p> <p>8 marked for identification, as of this</p> <p>9 date.)</p> <p>10 A. (Document review.)</p> <p>11 Q. This is an e-mail that you</p> <p>12 received on March 13, 2008, from Shu-ming</p> <p>13 Tzeng of QSI. Correct?</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. In this e-mail, Ms. Tzeng</p> <p>18 informed you and other QSI employees and Sony</p> <p>19 Optiarc employees that she had spoken with</p> <p>20 PLDS regarding a Dell internet negotiation for</p> <p>21 DVD read-write and combo drives. Correct?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 69</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And then Ms. Tzeng requested that</p> <p>6 Vincent Chng of Sony NEC Optiarc help to</p> <p>7 gather more information from other competitors</p> <p>8 for this Dell event. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. You personally spoke with</p> <p>14 competitors during procurement events.</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 MS. SCARLETT: Would the court</p> <p>21 reporter please provide the witness with</p> <p>22 Exhibit 374, a document Bates numbered</p> <p>23 Quanta_HAW_567.</p> <p>24 (Plaintiffs' Exhibit 374, E-mail</p> <p>25 dated December 13, 2007, from Shang Hao</p>

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<p style="text-align: right;">Page 70</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Chen to Voka Chen and others,</p> <p>3 Bates-numbered Quanta_HAW_567, marked</p> <p>4 for identification, as of this date.)</p> <p>5 A. (Document review.)</p> <p>6 Q. This is an e-mail you sent on</p> <p>7 December 13, 2007, to Voka Chen, among others.</p> <p>8 Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And you informed your colleagues</p> <p>14 that you spoke with PLDS Jerry during the</p> <p>15 negotiations for DVD read-writes in an</p> <p>16 internet negotiation for Dell. Correct?</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Specifically, you wrote to your</p> <p>21 colleagues that "PLDS tried best to get number</p> <p>22 3 (PLDS Jerry told me during the IN)."</p> <p>23 Correct?</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 72</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And this calendar entry reflects</p> <p>7 that you had dinner with PLDS Jerry and Fannie</p> <p>8 on December 26, 2007. Correct?</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And "Jerry" is Jerry Hsieh of</p> <p>13 PLDS. Correct?</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And "Fannie" is Fannie Lee of</p> <p>18 PLDS. Correct?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. At this meeting, you were</p> <p>24 strategizing with PLDS regarding an upcoming</p> <p>25 Dell procurement event. Correct?</p>
<p style="text-align: right;">Page 71</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. The "PLDS Jerry" in this document</p> <p>4 is Jerry Hsieh of PLDS. Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You had regular communications</p> <p>9 with PLDS. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: Could the court</p> <p>15 reporter please provide the witness with</p> <p>16 Exhibit 375, a document Bates-numbered</p> <p>17 Quanta_HAW_1459.</p> <p>18 (Plaintiffs' Exhibit 375,</p> <p>19 Calendar entry for December 26, 2007,</p> <p>20 Bates-numbered Quanta_HAW_1459, marked</p> <p>21 for identification, as of this date.)</p> <p>22 A. (Document review.)</p> <p>23 Q. This is a calendar entry for</p> <p>24 December 26, 2007, that was produced from your</p> <p>25 files. Correct?</p>	<p style="text-align: right;">Page 73</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 MS. SCARLETT: Could the court</p> <p>6 reporter please provide the witness with</p> <p>7 Exhibit 376 and 376-A, a document Bates</p> <p>8 number Quanta_HAW_787.</p> <p>9 (Plaintiffs' Exhibit 376, E-mail</p> <p>10 dated December 25, 2007, from Shang Hao</p> <p>11 Chen, Bates-numbered Quanta_HAW_787,</p> <p>12 marked for identification, as of this</p> <p>13 date.)</p> <p>14 (Plaintiffs' Exhibit 376-A,</p> <p>15 English translation of Exhibit 376,</p> <p>16 marked for identification, as of this</p> <p>17 date.)</p> <p>18 A. (Document review.)</p> <p>19 Q. This is an e-mail that you sent</p> <p>20 on December 25, 2007, with the subject matter,</p> <p>21 "Re tomorrow night."</p> <p>22 Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 74</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. In this e-mail, you informed your</p> <p>4 colleagues that you intended to "strategize</p> <p>5 with PLDS in preparation for next Dell IN, as</p> <p>6 IN is too critical. Additional, I want to</p> <p>7 check the number of their share."</p> <p>8 Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And, in fact, that was what you</p> <p>14 discussed with Jerry Hsieh at dinner the</p> <p>15 following evening. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. You and your competitors often</p> <p>21 signaled level of aggressiveness to each other</p> <p>22 as a way to slow pricing declines. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 76</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. Please turn to the second page of</p> <p>5 this exhibit.</p> <p>6 In this e-mail, Sally Huang</p> <p>7 informed you and employees of Sony Optiarc</p> <p>8 that there was no need to be aggressive for an</p> <p>9 RFQ because TSST was also willing to not be</p> <p>10 aggressive. Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Specifically, Sally Huang wrote,</p> <p>16 "We don't want to be aggressive for this run,</p> <p>17 since TSST is not willing to be aggressive for</p> <p>18 this portion RFQ."</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And reaching an understanding on</p> <p>25 levels of aggressiveness was one way that you</p>
<p style="text-align: right;">Page 75</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. If a competitor told you that it</p> <p>4 did not intend to be aggressive for an event,</p> <p>5 then QSI understood that it also did not have</p> <p>6 to be aggressive in lowering prices. Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 MS. SCARLETT: Would the court</p> <p>12 reporter please provide the witness with</p> <p>13 Exhibit 377, a document Bates-numbered</p> <p>14 Q321785.</p> <p>15 (Plaintiffs' Exhibit 377, E-mail</p> <p>16 dated April 10, 2008, from Sally Huang</p> <p>17 to Shang Hao Chen, Bates-numbered</p> <p>18 Q321785, marked for identification, as</p> <p>19 of this date.)</p> <p>20 A. (Document review.)</p> <p>21 Q. This is an e-mail that you</p> <p>22 received from Sally Huang on April 10, 2008.</p> <p>23 Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 77</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 would reach agreements with your competitors.</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You often reported the status of</p> <p>9 your competitors to your colleagues. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: Could the court</p> <p>15 reporter please provide the witness with</p> <p>16 Exhibit 378 and 378-A, a document</p> <p>17 Bates-numbered Quanta_HAW_2989.</p> <p>18 (Plaintiffs' Exhibit 378,</p> <p>19 Document dated February 15, 2008,</p> <p>20 Bates-numbered Quanta_HAW_2989, marked</p> <p>21 for identification, as of this date.)</p> <p>22 (Plaintiffs' Exhibit 378-A,</p> <p>23 English translation of Exhibit 378,</p> <p>24 marked for identification, as of this</p> <p>25 date.)</p>

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<p style="text-align: right;">Page 78</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. So the second e-mail in the chain</p> <p>4 is an e-mail that you sent on February 15,</p> <p>5 2008. Correct?</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Could you turn to the second page</p> <p>10 of this exhibit, please.</p> <p>11 In February 2008, you collected</p> <p>12 information from your competitors in advance</p> <p>13 of a Dell reverse auction for DVD read-write</p> <p>14 and combo drives. Correct?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. You had spoken with TSST before</p> <p>20 you wrote this e-mail. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Specifically you wrote, "TSST</p>	<p style="text-align: right;">Page 80</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 this Dell event, didn't you?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. You wrote in your e-mail, "Jerry</p> <p>8 said that he must obtain one of the last two</p> <p>9 positions (two to three weeks ago, they quoted</p> <p>10 0.1 lower than March, similar to us). I</p> <p>11 believe in last RFQ, nobody really reduced;</p> <p>12 therefore, we are having this April IN."</p> <p>13 Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And by "Jerry," you meant Jerry</p> <p>19 Hsieh of PLDS. Correct?</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. You spoke with your competitors</p> <p>24 regarding what rank they intended to take at</p> <p>25 auctions. Correct?</p>
<p style="text-align: right;">Page 79</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 also mentioned that first place will</p> <p>3 definitely face COS issue. Anyway, I believe</p> <p>4 TSST still will be most aggressive."</p> <p>5 Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. You had also spoken with HLDS</p> <p>11 before this Dell event. Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. In your e-mail, you informed your</p> <p>17 colleagues that HLDS had stated, "HLDS even</p> <p>18 not so aggressive to get number 2. They said</p> <p>19 if possible (pricing is not too bloody), they</p> <p>20 have intention to get number 2."</p> <p>21 Correct?</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. You also spoke with PLDS before</p>	<p style="text-align: right;">Page 81</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And this was another way of</p> <p>7 gauging how aggressively they would price.</p> <p>8 Correct?</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And knowing your competitors'</p> <p>13 intentions allowed QSI not to decrease its</p> <p>14 prices as much. Correct?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 MS. SCARLETT: Could the court</p> <p>20 reporter please provide the witness with</p> <p>21 Exhibit 379 and 379-A, a document</p> <p>22 Bates-numbered Quanta_HAW_2328.</p> <p>23 (Plaintiffs' Exhibit 379,</p> <p>24 Document Bates-numbered Quanta_HAW_2328,</p> <p>25 marked for identification, as of this</p>

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<p style="text-align: right;">Page 82</p> <p>1 S. Chen - Confidential Restricted 2 date.) 3 (Plaintiffs' Exhibit 379-A, 4 English translation of Exhibit 379, 5 marked for identification, as of this 6 date.) 7 A. (Document review.) 8 Q. Starting at the second e-mail on 9 the first page, this is an e-mail from you to 10 Voka Chen, among others, on May 28, 2008. 11 Correct? 12 MR. WALTER: Objection; form. 13 A. On advice of my counsel, I invoke 14 my Fifth Amendment rights under the US 15 Constitution and decline to answer. 16 Q. Could you please turn to page 3 17 of this exhibit. 18 On May 28, 2008, you informed 19 Voka Chen and your colleagues that you would 20 contact HLDS to see if they intended to take 21 second place for a Dell procurement event for 22 DVD read-write drives. Correct? 23 MR. WALTER: Objection; form. 24 A. On advice of my counsel, I invoke 25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 84</p> <p>1 S. Chen - Confidential Restricted 2 MS. SCARLETT: Could the court 3 reporter please provide the witness with 4 Exhibit 380, a document Bates-numbered 5 Quanta_HAW_3064. 6 (Plaintiffs' Exhibit 380, E-mail 7 dated May 30, 2008, from Shang Hao Chen, 8 Bates-numbered Quanta_HAW_3064, marked 9 for identification, as of this date.) 10 A. (Document review.) 11 Q. This is an e-mail written by you 12 on May 30, 2008. Correct? 13 MR. WALTER: Objection; form. 14 A. On advice of my counsel, I invoke 15 my Fifth Amendment rights under the US 16 Constitution and decline to answer. 17 Q. In this e-mail, you informed your 18 colleagues that "Jerry said SATA RW price, 19 TSST and HLDS is around 24.6. PLDS keep high 20 at \$27, but my phone is quite noisy. I am 21 sure \$24.6 of TSST, not sure about 27 of PLDS. 22 Need to check again." 23 You wrote that, didn't you, sir? 24 MR. WALTER: Objection; form. 25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 83</p> <p>1 S. Chen - Confidential Restricted 2 Constitution and decline to answer. 3 Q. Specifically, you stated to your 4 colleagues, "So we will see if HLDS has the 5 intention to take second place." 6 Correct? 7 MR. WALTER: Objection; form. 8 A. On advice of my counsel, I invoke 9 my Fifth Amendment rights under the US 10 Constitution and decline to answer. 11 Q. And you stated to your colleagues 12 that "If HLDS must take second place, we will 13 not compete with them for it." 14 Correct? 15 MR. WALTER: Objection; form. 16 A. On advice of my counsel, I invoke 17 my Fifth Amendment rights under the US 18 Constitution and decline to answer. 19 Q. And you continued to speak with 20 your competitors during this auction, didn't 21 you? 22 MR. WALTER: Objection; form. 23 A. On advice of my counsel, I invoke 24 my Fifth Amendment rights under the US 25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 85</p> <p>1 S. Chen - Confidential Restricted 2 my Fifth Amendment rights under the US 3 Constitution and decline to answer. 4 Q. The "Jerry" you refer to here is 5 Jerry Hsieh of PLDS. Correct? 6 A. On advice of my counsel, I invoke 7 my Fifth Amendment rights under the US 8 Constitution and decline to answer. 9 Q. And Jerry also relayed to you 10 pricing information of your competitors, TSST 11 and HLDS, in addition to pricing information 12 from his own company, PLDS. Correct? 13 MR. WALTER: Objection; form. 14 A. On advice of my counsel, I invoke 15 my Fifth Amendment rights under the US 16 Constitution and decline to answer. 17 Q. And based on this pricing 18 information regarding the SATA drives being 19 sold to Dell, you concluded that QSI could 20 keep its pricing for the PATA DVD read-write 21 drives as high as possible. Correct? 22 MR. WALTER: Objection; form. 23 A. On advice of my counsel, I invoke 24 my Fifth Amendment rights under the US 25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 86</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. Sony Optiarc employees would</p> <p>3 often provide you with information from other</p> <p>4 competitors. Correct?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 MS. SCARLETT: Could the court</p> <p>10 reporter please provide the witness with</p> <p>11 Exhibit 381, a document Bates-numbered</p> <p>12 Quanta_HAW_25559.</p> <p>13 (Plaintiffs' Exhibit 381, E-mail</p> <p>14 dated August 22, 2008, from Vincent Chng</p> <p>15 to Shang Hao Chen, Bates-numbered</p> <p>16 Quanta_HAW_25559, marked for</p> <p>17 identification, as of this date.)</p> <p>18 A. (Document review.)</p> <p>19 Q. This is an e-mail that you</p> <p>20 received from Vincent Chng of Sony Optiarc, on</p> <p>21 August 22, 2008. Correct?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 88</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. In February 2009, Vincent Chng</p> <p>3 informed you that he had spoken with H Company</p> <p>4 concerning a Dell event for DVD read-write</p> <p>5 drives. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Could the court</p> <p>11 reporter please provide the witness with</p> <p>12 Exhibit 382, a document Bates-numbered</p> <p>13 Q261745.</p> <p>14 (Plaintiffs' Exhibit 382, E-mail</p> <p>15 dated February 10, 2009, from Shu-ming</p> <p>16 Tzeng to Shang Hao Chen, Bates-numbered</p> <p>17 Q261745, marked for identification, as</p> <p>18 of this date.)</p> <p>19 A. (Document review.)</p> <p>20 Q. This is an e-mail that you</p> <p>21 received from Shu-ming Tzeng on February 10,</p> <p>22 2009. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 87</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And in this e-mail, Vincent Chng</p> <p>3 of Sony NEC Optiarc informed you that he had</p> <p>4 spoken with HLDS regarding a Dell internet</p> <p>5 negotiation on DVD read-write drives.</p> <p>6 Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. Specifically, he informed you</p> <p>12 that "HLDS 31, \$35 is their Q4 RFQ price.</p> <p>13 (They provided Q3 and Q4 price in their RFQ</p> <p>14 submission.)"</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Mr. Chng also informed you that</p> <p>21 according to HLDS, PLDS RFQ price for January</p> <p>22 '09 is below \$31. Correct?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 89</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And the second e-mail on the</p> <p>4 first page is an e-mail that you received from</p> <p>5 Vincent Chng of Sony NEC Optiarc. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And in this e-mail, Mr. Chng</p> <p>11 informed you and others that "H Company has</p> <p>12 informed me that their management has given</p> <p>13 him a very aggressive target and is targeting</p> <p>14 a minimum of 30 percent share (number 2</p> <p>15 position). Based on this, I believe that the</p> <p>16 bid from other supplier will be quite</p> <p>17 aggressive."</p> <p>18 Do you see that, sir?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. By "H Company," you understood</p> <p>24 that Mr. Chng meant your competitor, HLDS.</p> <p>25 Correct?</p>

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<p style="text-align: right;">Page 90</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And knowing how aggressive your</p> <p>7 competitors were going to be was an important</p> <p>8 conversation for QSI in setting the price of</p> <p>9 ODDs that it sold to Dell. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Vincent Chng of Sony Optiarc</p> <p>15 often corresponded with Shu-ming Tzeng of</p> <p>16 Quanta Storage by instant messaging. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And you were aware of their</p> <p>22 communications. Correct?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 92</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 English translation of Exhibit 383,</p> <p>3 marked for identification, as of this</p> <p>4 date.)</p> <p>5 THE VIDEOGRAPHER: The time now</p> <p>6 is 11:41 a.m. This concludes Tape 2.</p> <p>7 We're going off the video record.</p> <p>8 (Recess taken from 11:41 a.m. to</p> <p>9 11:56 a.m.)</p> <p>10 THE VIDEOGRAPHER: The time is</p> <p>11 now 11:56 a.m. This begins Tape 3.</p> <p>12 We're back on the record with Shang Hao</p> <p>13 Chen.</p> <p>14 BY MS. SCARLETT:</p> <p>15 Q. Looking at Exhibit 383, sir, this</p> <p>16 is an e-mail that you received from Shu-ming</p> <p>17 Tzeng on June 23, 2008. Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And in this e-mail, Shu-ming</p> <p>23 Tzeng forwarded you an instant-messaging</p> <p>24 conversation she had with Vincent Chng of Sony</p> <p>25 NEC Optiarc. Correct?</p>
<p style="text-align: right;">Page 91</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And during these</p> <p>3 instant-messaging conversations, they would</p> <p>4 exchange information gained from competitors.</p> <p>5 Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And Ms. Tzeng would copy these</p> <p>11 instant-messaging conversations and provide</p> <p>12 them to you in e-mails. Correct?</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 Exhibit 383 and 383-A, a document</p> <p>19 Bates-numbered Q123066.</p> <p>20 (Plaintiffs' Exhibit 383, E-mail</p> <p>21 June 23, 2008, from Shu-ming Tzeng to</p> <p>22 Shang Hao Chen, Bates-numbered Q123066,</p> <p>23 marked for identification, as of this</p> <p>24 date.)</p> <p>25 (Plaintiffs' Exhibit 383-A,</p>	<p style="text-align: right;">Page 93</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Specifically at the top of the</p> <p>7 e-mail, she mentions, "Vincent is also testing</p> <p>8 our intelligence."</p> <p>9 Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Ms. Tzeng and Mr. Chng agree in</p> <p>15 this conversation that because there was no</p> <p>16 competition with PANA and TEAC, that Optiarc</p> <p>17 and QSI did not need to lower the price to</p> <p>18 Dell. Correct?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. Vincent Chng stated in this</p> <p>24 conversation, "There's no reason for us to</p> <p>25 lower price when competition is not moving."</p>

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<p style="text-align: right;">Page 94</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. In July 2008, Ms. Tzeng sent you</p> <p>8 another instant-message conversation with</p> <p>9 Vincent Chng. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: Could the court</p> <p>15 reporter please provide the witness with</p> <p>16 Exhibit 384, which is a document</p> <p>17 Bates-numbered Quanta_HAW_148855.</p> <p>18 (Plaintiffs' Exhibit 384, E-mail</p> <p>19 dated July 3, 2008, from Shu-ming Tzeng</p> <p>20 to Shang Hao Chen, Bates-numbered</p> <p>21 Quanta_HAW_148855, marked for</p> <p>22 identification, as of this date.)</p> <p>23 (Plaintiffs' Exhibit 384-A,</p> <p>24 English translation of Exhibit 384,</p> <p>25 marked for identification, as of this</p>	<p style="text-align: right;">Page 96</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. Could you turn to the second page</p> <p>3 of the document, please.</p> <p>4 Mr. Chng also informed Ms. Tzeng</p> <p>5 that TEAC had disclosed that "Their tray PATA</p> <p>6 combo is \$10.98."</p> <p>7 Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And Mr. Chng informed Ms. Tzeng</p> <p>13 that the TEAC account manager had told him,</p> <p>14 "Their native DVD-ROM is \$20."</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. In July 2008, you received an</p> <p>21 e-mail containing another instant-messaging</p> <p>22 conversation between Vincent Chng of Optiarc</p> <p>23 and Ms. Tzeng at QSI. Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 95</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 date.)</p> <p>3 A. (Document review.)</p> <p>4 Q. This is an e-mail that you</p> <p>5 received from Shu-ming Tzeng on July 3, 2008.</p> <p>6 Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. In this message, Mr. Chng</p> <p>12 informed Ms. Tzeng that yesterday he had met</p> <p>13 with the TEAC account manager. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Mr. Chng informed Ms. Tzeng that</p> <p>19 TEAC had disclosed, "Their price for slot PATA</p> <p>20 DVD-RW(Q2) is \$38.26."</p> <p>21 Correct?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 97</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 MS. SCARLETT: Could the court</p> <p>5 reporter please provide the witness with</p> <p>6 Exhibit 385 and 385-A, a document</p> <p>7 Bates-numbered 256590.</p> <p>8 (Plaintiffs' Exhibit 385, E-mail</p> <p>9 dated July 10, 2008, from Shu-ming Tzeng</p> <p>10 to Shang Hao Chen, Bates-numbered</p> <p>11 256590, marked for identification, as of</p> <p>12 this date.)</p> <p>13 (Plaintiffs' Exhibit 385-A,</p> <p>14 English translation of Exhibit 385,</p> <p>15 marked for identification, as of this</p> <p>16 date.)</p> <p>17 A. (Document review.)</p> <p>18 Q. Sir, this is an e-mail that you</p> <p>19 received from Shu-ming Tzeng on July 10, 2008.</p> <p>20 Correct?</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And in this e-mail, Ms. Tzeng</p> <p>25 forwarded you an IM conversation with Vincent</p>

25 (Pages 94 to 97)

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<p style="text-align: right;">Page 98</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Chng of Sony. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 THE VIDEOGRAPHER: Excuse me.</p> <p>8 This is the videographer. We need to</p> <p>9 take a quick technical break. Is that</p> <p>10 okay?</p> <p>11 MS. SCARLETT: Yes, of course.</p> <p>12 THE VIDEOGRAPHER: The time now</p> <p>13 is 12:07 p.m. This concludes Tape 3.</p> <p>14 We're going off the video record.</p> <p>15 (Lunch recess taken from</p> <p>16 12:07 p.m. to 1:19 p.m.)</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 100</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 a request from Dell for rebates on certain DVD</p> <p>3 read-write drives. Correct?</p> <p>4 MR. WALTER: Objection to form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Would you turn to page 4 of the</p> <p>9 document, please.</p> <p>10 Dell was requesting a rebate from</p> <p>11 Sony NEC Optiarc for these drives, that</p> <p>12 Optiarc was reluctant to provide. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And in this e-mail from Alex Wu</p> <p>18 to Vincent Chng, he stated that "As an account</p> <p>19 manager, we expect you to stand firm and fight</p> <p>20 for Dell interests. This is the value we</p> <p>21 see."</p> <p>22 Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 99</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A F T E R N O O N S E S S I O N</p> <p>3 (Time noted: 1:19 p.m.)</p> <p>4</p> <p>5 S H A N G H A O C H E N, resumed and</p> <p>6 testified further through the</p> <p>7 interpreter as follows:</p> <p>8 THE VIDEOGRAPHER: The time is</p> <p>9 now 1:19 p.m. We're back on the record.</p> <p>10 CONTINUED EXAMINATION</p> <p>11 BY MS. SCARLETT:</p> <p>12 Q. Turning back to Exhibit 385,</p> <p>13 which was in front of you before the break,</p> <p>14 Mr. Chen, in this e-mail -- I'm sorry. I</p> <p>15 couldn't hear that.</p> <p>16 Okay.</p> <p>17 In this e-mail, Ms. Tzeng</p> <p>18 forwarded to you an instant-messaging</p> <p>19 conversation with Vincent Chng of Sony.</p> <p>20 Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And this conversation related to</p>	<p style="text-align: right;">Page 101</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And this e-mail from Alex Wu was</p> <p>4 forwarded to you by Ms. Tzeng. Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And along with this e-mail,</p> <p>9 Ms. Tzeng copied her instant-messaging</p> <p>10 conversation with Mr. Chng. Correct?</p> <p>11 MR. WALTER: Objection to form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And in this conversation, is it</p> <p>16 true that Mr. Chng stated, "As an account</p> <p>17 manager, my duty is to fight for my own</p> <p>18 company's interests"?</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And Ms. Tzeng agreed, stating,</p> <p>25 "Who needs to care about how much cost-saving</p>

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<p style="text-align: right;">Page 102</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 you do for Dell?"</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. In October 2008, Ms. Tzeng sent</p> <p>9 you another instant-messaging conversation</p> <p>10 that had occurred between her and Mr. Chng of</p> <p>11 Sony Optiarc. Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 Exhibit 386 and 386-A, which is a</p> <p>19 document Bates-numbered</p> <p>20 Quanta_HAW_37186.</p> <p>21 (Plaintiffs' Exhibit 386, E-mail</p> <p>22 dated October 24, 2008, from Shu-ming</p> <p>23 Tzeng to Shang Hao Chen, Bates-numbered</p> <p>24 Quanta_HAW_37186, marked for</p> <p>25 identification, as of this date.)</p>	<p style="text-align: right;">Page 104</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And Ms. Tzeng told Mr. Chng that</p> <p>5 she had lunch with the PLDS team. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And PLDS had told Ms. Tzeng that</p> <p>11 they had no intention to lower the RFQ price.</p> <p>12 Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And Mr. Chng told Ms. Tzeng that</p> <p>18 PLDS had 100K in inventory of their Blu drive</p> <p>19 combo drive. Correct?</p> <p>20 MR. WALTER: Object to the form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And Mr. Chng also told Ms. Tzeng</p> <p>25 that HLDS had about 60K in inventory for the</p>
<p style="text-align: right;">Page 103</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 (Plaintiffs' Exhibit 386-A,</p> <p>3 English translation of Exhibit 386,</p> <p>4 marked for identification, as of this</p> <p>5 date.)</p> <p>6 A. (Document review.)</p> <p>7 Q. This is an e-mail that you</p> <p>8 received from Shu-ming Tzeng on October 24,</p> <p>9 2008. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. In this message, Mr. Chng</p> <p>15 informed Ms. Tzeng that he was currently</p> <p>16 trying to check price of other supplier.</p> <p>17 Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And this conversation related to</p> <p>23 a Dell internet auction. Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 105</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 same Blu-Ray drive. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And the information provided by</p> <p>8 Mr. Chng was the subject matter of the e-mail</p> <p>9 that Ms. Tzeng sent to you: "PLDS has 110K</p> <p>10 half-height BD combo inventory. HLDS has</p> <p>11 60K."</p> <p>12 Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. In March 2009, Shu Ming Tzeng</p> <p>18 sent you another instant-messaging</p> <p>19 conversation that she had with Vincent Chng at</p> <p>20 Sony Optiarc. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 MS. SCARLETT: Could the court</p>

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<p style="text-align: right;">Page 106</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 reporter please provide the witness with</p> <p>3 Exhibit 387 and 387-A, a document</p> <p>4 Bates-stamped Quanta_HAW_60290.</p> <p>5 (Plaintiffs' Exhibit 387, E-mail</p> <p>6 dated March 23, 2009, from Shu-ming</p> <p>7 Tzeng to Shang Hao Chen, Bates-numbered</p> <p>8 Quanta_HAW_60290, marked for</p> <p>9 identification, as of this date.)</p> <p>10 (Plaintiffs' Exhibit 387-A,</p> <p>11 English translation of Exhibit 387,</p> <p>12 marked for identification, as of this</p> <p>13 date.)</p> <p>14 A. (Document review.)</p> <p>15 Q. Is this an e-mail that you</p> <p>16 received from Shu-ming Tzeng on March 23,</p> <p>17 2009?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And this e-mail contains an</p> <p>23 instant-messaging conversation between</p> <p>24 Ms. Tzeng and Vincent Chng. Correct?</p> <p>25 MR. WALTER: Objection; form.</p>	<p style="text-align: right;">Page 108</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And you told your colleagues that</p> <p>5 you thought the OEM price for these drives was</p> <p>6 higher than \$17. Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. In response to this e-mail,</p> <p>12 Mrs. Tzeng spoke to Mr. Chng, who she called</p> <p>13 "informant number 1." Correct?</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. But Ms. Tzeng also spoke with</p> <p>18 informant number 2, someone named Samson.</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Isn't it true that Samson was</p> <p>25 Samson Chen, C-H-E-N, from Sony Taiwan?</p>
<p style="text-align: right;">Page 107</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Please turn to the second page of</p> <p>6 this document.</p> <p>7 Ms. Tzeng sent this conversation</p> <p>8 with Mr. Chng in response to an e-mail from</p> <p>9 you stating that "MTK Winson called me."</p> <p>10 Correct?</p> <p>11 MR. WALTER: Objection to form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. By "MTK Winson," you meant Winson</p> <p>16 Hsu, H-s-u, the deputy director of the</p> <p>17 marketing division of Media Tech. Correct?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Mr. Hsu of Media Tech informed</p> <p>22 you that his understanding of the OEM price</p> <p>23 was 15.X for half-height drives. Correct?</p> <p>24 MR. WALTER: Objection to form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 109</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And Samson told Ms. Tzeng that</p> <p>7 Sony's price for half-height read-write drives</p> <p>8 was \$17.X. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And Samson also said to Ms. Tzeng</p> <p>14 that the price for channel sales was even</p> <p>15 higher than the price for OEMs. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And based on this, Ms. Tzeng told</p> <p>21 you that MTK Winson's quoted price to you was</p> <p>22 a bluff. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 110</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And isn't it true that in</p> <p>4 general, the price for channel sales was</p> <p>5 higher than the price of drives sold to OEMs</p> <p>6 like Dell and HP?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. In March 2009, Ms. Tzeng sent you</p> <p>12 another instant message between her and</p> <p>13 Mr. Chng of Sony NEC Optiarc regarding a Dell</p> <p>14 DVD read-write event. Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: Could the court</p> <p>19 reporter please provide the witness with</p> <p>20 Exhibit 388 and 388-A, a document</p> <p>21 Bates-numbered QSI-SUB1526142.</p> <p>22 (Plaintiffs' Exhibit 388, E-mail</p> <p>23 dated March 16, 2009, from Shu-ming</p> <p>24 Tzeng to Shang Hao Chen, Bates-numbered</p> <p>25 QSI-SUB1526142, marked for</p>	<p style="text-align: right;">Page 112</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Ms. Tzeng and Mr. Chng of Sony Optiarc.</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And Mr. Chng reports to Shu-ming</p> <p>9 in this conversation that "HLDS told me that</p> <p>10 they were number 4 in tray IN. Their price is</p> <p>11 \$22.64."</p> <p>12 Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And Mr. Chng reported to</p> <p>18 Ms. Tzeng that "PLDS is number 3. They have</p> <p>19 shortage issue, so all don't want to move."</p> <p>20 Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And it seems from this exchange</p>
<p style="text-align: right;">Page 111</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 identification, as of this date.)</p> <p>3 (Plaintiffs' Exhibit 388-A,</p> <p>4 English translation of Exhibit 388,</p> <p>5 marked for identification, as of this</p> <p>6 date.)</p> <p>7 A. (Document review.)</p> <p>8 Q. This is an e-mail that you</p> <p>9 received from Shu-ming Tzeng on March 16,</p> <p>10 2009. Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And this reflects an</p> <p>16 instant-messaging conversation between</p> <p>17 Ms. Tzeng and Mr. Chng of Sony NEC Optiarc?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Sorry. I'm just going to</p> <p>23 rephrase that last question.</p> <p>24 This reflects an</p> <p>25 instant-messaging conversation between</p>	<p style="text-align: right;">Page 113</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 that Mr. Chng had also spoken with PLDS.</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. In May 2009, Shu-ming Tzeng sent</p> <p>9 you another instant-messaging conversation</p> <p>10 between her and Vincent Chng of Sony Optiarc.</p> <p>11 Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 Exhibit 389, which is a document</p> <p>19 Bates-marked Q172481.</p> <p>20 (Plaintiffs' Exhibit 389, E-mail</p> <p>21 dated May 26, 2009, from Shu-ming Tzeng</p> <p>22 to Shang Hao Chen, Bates-numbered</p> <p>23 Q172481, marked for identification, as</p> <p>24 of this date.)</p> <p>25 A. (Document review.)</p>

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<p style="text-align: right;">Page 114</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And this is an e-mail that you</p> <p>3 received from Shu-ming Tzeng on May 26, 2009.</p> <p>4 Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And this e-mail contains an</p> <p>9 instant-messaging conversation between</p> <p>10 Ms. Tzeng and Mr. Chng of Sony Optiarc.</p> <p>11 Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And in this conversation,</p> <p>17 Mr. Chng disclosed that he had spoken with</p> <p>18 PLDS regarding licensing fees on drives.</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. At times, you and Sony Optiarc</p> <p>25 would issue joint bids to customers. Correct?</p>	<p style="text-align: right;">Page 116</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Lin to Shang Hao Chen, Bates-numbered</p> <p>3 Quanta_HAW_31680, marked for</p> <p>4 identification, as of this date.)</p> <p>5 A. (Document review.)</p> <p>6 Q. This is an e-mail from Caroline</p> <p>7 Lin to you, dated September 23, 2008.</p> <p>8 Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And the topic of this e-mail is</p> <p>14 "CQ1 RFQ discussion with Optiarc Amino."</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. This e-mail reflects meeting</p> <p>21 minutes as sent by Caroline Lin from a meeting</p> <p>22 with Masufumi Amino at Sony Optiarc. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 115</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And at times, you and Sony</p> <p>7 Optiarc would separately bid for customers.</p> <p>8 Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. In September 2008, you and Sony</p> <p>14 NEC Optiarc decided to separately bid to HP</p> <p>15 but then coordinated your pricing. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 MS. SCARLETT: Could the court</p> <p>21 reporter please provide the witness with</p> <p>22 Exhibit 390, a document Bates-stamped</p> <p>23 Quanta_HAW_31680.</p> <p>24 (Plaintiffs' Exhibit 390, E-mail</p> <p>25 dated September 23, 2008, from Caroline</p>	<p style="text-align: right;">Page 117</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: For the court</p> <p>4 reporter, I'm just going to spell this</p> <p>5 now: Masufumi, M-a-s-u-f-u-m-i,</p> <p>6 A-m-i-n-o, was the name I just referred</p> <p>7 to.</p> <p>8 Q. This e-mail reflects that Sony</p> <p>9 "NEC Optiarc and QSI came to a consensus to</p> <p>10 persuade Edward to accept separate RFQ for</p> <p>11 Optiarc and QSI."</p> <p>12 Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And the "Edward" being referred</p> <p>18 to here is Edward Yambao, Y-a-m-b-a-o, of HP.</p> <p>19 Correct?</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And by "consensus," the companies</p> <p>24 meant they came to an agreement. Correct?</p> <p>25 MR. WALTER: Objection; form.</p>

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<p style="text-align: right;">Page 118</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And Sony NEC Optiarc and QSI</p> <p>6 intended to discuss pricing after Sony NEC</p> <p>7 Optiarc met with HP. Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. The meeting minutes reflected,</p> <p>13 "Then further pricing detail will be discussed</p> <p>14 after Edward's meeting with Optiarc tomorrow."</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And during this meeting with Sony</p> <p>21 NEC Optiarc and QSI, you discussed intended</p> <p>22 pricing to HP. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 120</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. In this e-mail, Caroline Lin</p> <p>4 informed you that she had called Edward that</p> <p>5 morning, and he was "still firm to do the RFQ</p> <p>6 with us and Optiarc as one supplier."</p> <p>7 Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. So Ms. Lin informed you that she</p> <p>13 was "having dinner with HLDS Eugene this</p> <p>14 Friday evening and get the consensus on the</p> <p>15 price protection."</p> <p>16 Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Do you see in this e-mail that</p> <p>22 Ms. Lin informed you that she was "having</p> <p>23 dinner with HLDS Eugene this Friday evening</p> <p>24 and get the consensus on the price</p> <p>25 protection"?</p>
<p style="text-align: right;">Page 119</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. HP did not allow you to submit</p> <p>4 separate bids from Sony NEC Optiarc for this</p> <p>5 event. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Could the court</p> <p>11 reporter please provide the witness with</p> <p>12 Exhibit 391, an exhibit Bates-numbered</p> <p>13 Quanta_HAW_35744.</p> <p>14 (Plaintiffs' Exhibit 391, E-mail</p> <p>15 dated October 16, 2008, from Caroline</p> <p>16 Lin to Sally Huang and Shang Hao Chen,</p> <p>17 Bates-numbered Quanta_HAW_35744, marked</p> <p>18 for identification, as of this date.)</p> <p>19 A. (Document review.)</p> <p>20 Q. This is an e-mail from Caroline</p> <p>21 Lin to Sally Huang, where you're cc'd. And</p> <p>22 it's dated October 16, 2008. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 121</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And by "consensus," you</p> <p>6 understood that Ms. Lin was seeking to reach</p> <p>7 an agreement with HLDS. Correct?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And the "Edward" referred to in</p> <p>12 this e-mail was Edward Yambao of HP. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 MS. SCARLETT: Could the court</p> <p>18 reporter please provide the witness with</p> <p>19 Exhibit 392 and 392-A, a document</p> <p>20 Bates-stamped Quanta_HAW_36740.</p> <p>21 (Plaintiffs' Exhibit 392, E-mail</p> <p>22 dated October 22, 2008, from Sally Huang</p> <p>23 to Shang Hao Chen, Bates-numbered</p> <p>24 Quanta_HAW_36740, marked for</p> <p>25 identification, as of this date.)</p>

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<p style="text-align: right;">Page 122</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 (Plaintiffs' Exhibit 392-A,</p> <p>3 English translation of Exhibit 392,</p> <p>4 marked for identification, as of this</p> <p>5 date.)</p> <p>6 A. (Document review.)</p> <p>7 Q. And this is an e-mail from Sally</p> <p>8 Huang, cc'ing you, dated October 22, 2008.</p> <p>9 Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And in this e-mail, Ms. Lin</p> <p>15 informed you that she had met with an employee</p> <p>16 from HLDS. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Specifically, she said that "Last</p> <p>22 week I met HLDS guy. According to what he</p> <p>23 said, their best price is around 24.65</p> <p>24 eventually. However, they won't go that far</p> <p>25 in the first round as well. And might provide</p>	<p style="text-align: right;">Page 124</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Exhibit 393, a document Bates-stamped</p> <p>3 Quanta_HAW_21498.</p> <p>4 (Plaintiffs' Exhibit 393, E-mail</p> <p>5 dated October 24, 2008, from Shang Hao</p> <p>6 Chen to Sally Huang and Caroline Lin,</p> <p>7 Bates-numbered Quanta_HAW_21498, marked</p> <p>8 for identification, as of this date.)</p> <p>9 A. (Document review.)</p> <p>10 Q. This is an e-mail from you to</p> <p>11 Sally Huang and Caroline Lin, dated October</p> <p>12 24, 2008. Correct?</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Turning to page 3 of the</p> <p>17 document, please. This is an e-mail sent from</p> <p>18 Caroline Lin to you on October 24, 2008.</p> <p>19 Correct?</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. In this e-mail, Ms. Lin reported</p> <p>24 to you that the key competitors in HP's OPP</p> <p>25 RFQ were PLDS, TSST, HLDS, and QSI. Correct?</p>
<p style="text-align: right;">Page 123</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 a higher price to see HP's feedback and later</p> <p>3 react."</p> <p>4 And I'm specifically referring to</p> <p>5 page 5 of the document.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And turning to the third page of</p> <p>10 this document, based on this information, you</p> <p>11 instructed Ms. Lin to bid 24.70 to HP.</p> <p>12 Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And during this event, QSI</p> <p>18 continued to have discussions with its</p> <p>19 competitors regarding price. Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 MS. SCARLETT: Could the court</p> <p>25 reporter please provide the witness with</p>	<p style="text-align: right;">Page 125</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And Ms. Lin reported that in</p> <p>7 order to protect the price in certain level,</p> <p>8 suppliers have the consensus to keep the price</p> <p>9 no lower than USD 24.25. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And Ms. Lin, therefore, suggested</p> <p>15 that "QSI submit a quote of 24.40 tomorrow and</p> <p>16 be prepared for the further decrease to USD</p> <p>17 24.25 to 30 in the end, if we want to win over</p> <p>18 20 percent share."</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Isn't it true, QSI intended to</p> <p>25 submit a bid in line with its consensus with</p>

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<p style="text-align: right;">Page 126</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 other suppliers. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And by "consensus," QSI meant</p> <p>8 agreement. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. In 2008, QSI and Sony Optiarc</p> <p>14 agreed to service Buffalo as a customer.</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 MS. SCARLETT: Could the reporter</p> <p>21 please provide the witness with Exhibit</p> <p>22 394, a document Bates-stamped Q149046.</p> <p>23 (Plaintiffs' Exhibit 394, E-mail</p> <p>24 exchange dated November 17, 2008,</p> <p>25 between Shang Hao Chen and Yasuhiro</p>	<p style="text-align: right;">Page 128</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And Yasuhiro Nogami responded</p> <p>3 that "Sony would maintain the business to</p> <p>4 enjoy both of QSI and Sony."</p> <p>5 Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Could the court</p> <p>11 reporter please provide the witness with</p> <p>12 Exhibit 395, a document Bates-stamped</p> <p>13 Q259138.</p> <p>14 (Plaintiffs' Exhibit 395, E-mail</p> <p>15 dated January 6, 2009, from Shu-ming</p> <p>16 Tzeng to Shang Hao Chen, Bates-numbered</p> <p>17 Q259138, marked for identification, as</p> <p>18 of this date.)</p> <p>19 A. (Document review.)</p> <p>20 Q. And this is an e-mail sent by</p> <p>21 Shu-ming Tzeng to you, dated January 6, 2009.</p> <p>22 Correct?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 127</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Nogami, Bates-numbered Q149046, marked</p> <p>3 for identification, as of this date.)</p> <p>4 A. (Document review.)</p> <p>5 Q. This is an e-mail exchange dated</p> <p>6 November 17, 2008, between you and Yasuhiro</p> <p>7 Nogami of Sony Taiwan. Correct?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. In this November 2008 exchange,</p> <p>12 you stated to Yasuhiro Nogami of Sony Taiwan</p> <p>13 that you spoke with Nelson and, "Now he fully</p> <p>14 understands the situation. He said he didn't</p> <p>15 quote to Buffalo, and he won't either."</p> <p>16 Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And by "Nelson," you meant Nelson</p> <p>22 Chen of QSI. Correct?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 129</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And QSI offered a lower price to</p> <p>3 Logitech, a competitor of Buffalo. Correct?</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And Sony found out about this</p> <p>8 lower price being offered to Logitech.</p> <p>9 Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. On January 6, 2009, Yasuhiro</p> <p>15 Nogami e-mailed you and told you that he had</p> <p>16 heard the price that QSI was negotiating with</p> <p>17 Logitech. Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Mr. Nogami wrote to you, "We got</p> <p>23 information from Logitech regarding the price</p> <p>24 for AD-7580A. They will ask QSS to reduce the</p> <p>25 price to \$23. (Current price is US \$28,</p>

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<p style="text-align: right;">Page 130</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 already less than Buffalo price!!)"</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Mr. Nogami stated that "If QSS</p> <p>9 reduce the price, we have to follow the</p> <p>10 price."</p> <p>11 Correct?</p> <p>12 MR. WALTER: Objection.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Sony asked that QSI not adjust</p> <p>17 the price to Logitec. Correct?</p> <p>18 MR. WALTER: Object to the form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Those were Mr. Nogami's exact</p> <p>23 words: "Please let QSS sales know the</p> <p>24 background and ask not to adjust the price."</p> <p>25 Correct?</p>	<p style="text-align: right;">Page 132</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 videographer. We need to take a tape</p> <p>3 change in a few minutes.</p> <p>4 MS. SCARLETT: We can take a</p> <p>5 break right now.</p> <p>6 THE VIDEOGRAPHER: The time now</p> <p>7 is 2:17 p.m. This concludes Tape 3.</p> <p>8 We're going off the video record.</p> <p>9 (Recess taken from 2:17 p.m. to</p> <p>10 2:29 p.m.)</p> <p>11 (Plaintiffs' Exhibit 396, E-mail</p> <p>12 dated January 8, 2009, from Yasuhiro</p> <p>13 Nogami to Shang Hao Chen and others,</p> <p>14 Bates-numbered Q496271, marked for</p> <p>15 identification, as of this date.)</p> <p>16 THE VIDEOGRAPHER: The time is</p> <p>17 now 2:29 p.m. This begins Tape 4.</p> <p>18 We're back on the record with Shang Hao</p> <p>19 Chen.</p> <p>20 BY MS. SCARLETT:</p> <p>21 Q. In looking at Exhibit 396, sir,</p> <p>22 this is an e-mail from Yasuhiro Nogami of Sony</p> <p>23 Taiwan to you, among others, dated January 8,</p> <p>24 2009. Correct?</p> <p>25 MR. WALTER: Objection; form.</p>
<p style="text-align: right;">Page 131</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Shu-ming Tzeng informed you that</p> <p>6 it had been Quanta Storage's plan to offer a</p> <p>7 "more competitive price to Logitec to fight</p> <p>8 with Buffalo, as Buffalo will not be buying</p> <p>9 our drive soon."</p> <p>10 Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. After hearing from Sony, QSI</p> <p>16 changed its mind. Correct?</p> <p>17 MR. WALTER: Objection to form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Could the court</p> <p>22 reporter please provide the witness with</p> <p>23 Exhibit 396, a document Bates-numbered</p> <p>24 Q496271.</p> <p>25 THE VIDEOGRAPHER: This is the</p>	<p style="text-align: right;">Page 133</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Please turn to the second page of</p> <p>6 this document, sir.</p> <p>7 On January 6, 2009, Shu-ming</p> <p>8 Tzeng responded to Yasuhiro Nogami that "We</p> <p>9 really got the cost down request from Logitec,</p> <p>10 but we didn't meet their target to lower to US</p> <p>11 \$23. As advised, we quoted Logitec USD 29 for</p> <p>12 bare drive last time. We planned to drop the</p> <p>13 cost slightly for Logitec but that much."</p> <p>14 Correct?</p> <p>15 MR. WALTER: Objection to the</p> <p>16 form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Turn to the first page of the</p> <p>21 document, please, sir.</p> <p>22 Two days later, on January 8,</p> <p>23 2009, Ms. Tzeng responded to Sony Taiwan that</p> <p>24 it would only quote, that QSI would only quote</p> <p>25 US dollars \$28 to Logitec. Correct?</p>

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<p style="text-align: right;">Page 134</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Specifically, Ms. Tzeng wrote,</p> <p>7 "Confirmed, the price we quote Logitec is USD</p> <p>8 \$28 from Feb onwards."</p> <p>9 Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And in response, Mr. Nogami again</p> <p>15 asked Quanta Storage to consider not changing</p> <p>16 the price at all. Correct?</p> <p>17 MR. WALTER: Object to the form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Specifically, Mr. Nogami wrote,</p> <p>22 "Even QSS quote \$1 less, quantity will is not</p> <p>23 change. It seems just giving money to</p> <p>24 Logitec. In addition, the new price is US</p> <p>25 \$0.5 less than Buffalo that we shipped 80K in</p>	<p style="text-align: right;">Page 136</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 marked for identification, as of this</p> <p>3 date.)</p> <p>4 A. (Document review.)</p> <p>5 Q. This is an e-mail dated October</p> <p>6 15, 2008, from Shu-ming Tzeng to you.</p> <p>7 Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Attached are presentation</p> <p>13 materials that were shared with Pioneer.</p> <p>14 Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. In the second e-mail on the first</p> <p>19 page, you describe these materials as QSI's</p> <p>20 current sales organization, account passport,</p> <p>21 and sales activities. Correct?</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Could you please turn to page 17</p>
<p style="text-align: right;">Page 135</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 December. I believe even no change price,</p> <p>3 Logitec would not be able to change vendor</p> <p>4 from QSI."</p> <p>5 Correct?</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Logitec was not a customer you</p> <p>10 shared with Sony. Correct?</p> <p>11 MR. WALTER: Object to the form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 MS. SCARLETT: Could the court</p> <p>16 reporter please put in front of the</p> <p>17 witness Exhibit 397 and 397-A, a</p> <p>18 document Bates-numbered Quanta_HAW_35336</p> <p>19 and its attachments.</p> <p>20 (Plaintiffs' Exhibit 397,</p> <p>21 Document and attachments Bates-numbered</p> <p>22 Quanta_HAW_35336, marked for</p> <p>23 identification, as of this date.)</p> <p>24 (Plaintiffs' Exhibit 397-A,</p> <p>25 English translation of Exhibit 397,</p>	<p style="text-align: right;">Page 137</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 of the document, which is a slide entitled</p> <p>3 "Optiarc Initialized Biz: Fujitsu,</p> <p>4 Siemens/Buffalo/HP/CPC Channel."</p> <p>5 THE COURT REPORTER: Could you</p> <p>6 repeat the title, please?</p> <p>7 MS. SCARLETT: Yeah, the title is</p> <p>8 "Optiarc Initialized Biz: Fujitsu,</p> <p>9 Siemens/Buffalo/HP/CPC Channel."</p> <p>10 THE COURT REPORTER: One more</p> <p>11 time. I'm sorry.</p> <p>12 MS. SCARLETT: "Optiarc</p> <p>13 Initialized Biz: Fujitsu,</p> <p>14 Siemens/Buffalo/HP/CPC, and Channel."</p> <p>15 THE COURT REPORTER: Thank you.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. This slide reflects accounts that</p> <p>20 QSI shared with Optiarc. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And this slide describes Buffalo</p>

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<p style="text-align: right;">Page 138</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 as "Optiarc initialized biz."</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. This document does not discuss</p> <p>9 Logitech as a shared account with Optiarc.</p> <p>10 Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. You and your employees had</p> <p>16 regular meetings with your competitor PLDS.</p> <p>17 Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. In fact, Ms. Caroline Lin met</p> <p>23 once or twice a month with J.C. Lim of PLDS.</p> <p>24 Correct?</p> <p>25 MR. WALTER: Objection; form.</p>	<p style="text-align: right;">Page 140</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 is from Caroline Lin to you, dated December</p> <p>3 16, 2008. Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Please turn to the second page of</p> <p>9 this e-mail, sir.</p> <p>10 In this e-mail, Ms. Lin expressly</p> <p>11 informed you that she "may have a chat with</p> <p>12 J.C. once or twice a month. If there is any</p> <p>13 further information requested, please let me</p> <p>14 know."</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And she stated this at the same</p> <p>21 time she provided you with information</p> <p>22 regarding PLDS's relationship with HP.</p> <p>23 Correct?</p> <p>24 MR. WALTER: Objection.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 139</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 MS. SCARLETT: Could the court</p> <p>6 reporter please provide the witness with</p> <p>7 Exhibit 398 and 398-A, document</p> <p>8 Bates-numbered Quanta_HAW_47029.</p> <p>9 (Plaintiffs' Exhibit 398,</p> <p>10 Document Bates-numbered</p> <p>11 Quanta_HAW_47029, marked for</p> <p>12 identification, as of this date.)</p> <p>13 (Plaintiffs' Exhibit 398-A,</p> <p>14 English translation of Exhibit 398,</p> <p>15 marked for identification, as of this</p> <p>16 date.)</p> <p>17 A. (Document review.)</p> <p>18 Q. The top e-mail on this page is an</p> <p>19 e-mail from Sally Huang, where you're cc'd,</p> <p>20 dated December 16, 2008. Correct?</p> <p>21 MR. WALTER: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And the second e-mail on the page</p>	<p style="text-align: right;">Page 141</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. You regularly dined with PLDS</p> <p>5 employees. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Could the court</p> <p>11 reporter please give the witness Exhibit</p> <p>12 399 and 399-A, a document Bates-numbered</p> <p>13 Quanta_HAW_35636.</p> <p>14 (Plaintiffs' Exhibit 399, E-mail</p> <p>15 dated October 16, 2008, from Shu-ming</p> <p>16 Tzeng to Shang Hao Chen, Bates-numbered</p> <p>17 Quanta_HAW_35636, marked for</p> <p>18 identification, as of this date.)</p> <p>19 (Plaintiffs' Exhibit 399-A,</p> <p>20 English translation of Exhibit 399,</p> <p>21 marked for identification, as of this</p> <p>22 date.)</p> <p>23 A. (Document review.)</p> <p>24 Q. This is an e-mail from Shu-ming</p> <p>25 Tzeng to you, dated October 16, 2008.</p>

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<p style="text-align: right;">Page 142</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Correct?</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And this e-mail reflects that on</p> <p>7 October 23, 2008, you and PLDS employees</p> <p>8 planned to have lunch. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. You had regular phone calls with</p> <p>14 PLDS employees. Correct?</p> <p>15 MR. WALTER: Objection.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 MS. SCARLETT: Could the court</p> <p>20 reporter please provide the witness with</p> <p>21 Exhibit 400, a document Bates-numbered</p> <p>22 Quanta_HAW_47514.</p> <p>23 (Plaintiffs' Exhibit 400, E-mail</p> <p>24 string dated December 19, 2008, between</p> <p>25 Shang Hao Chen and Sunny Wong,</p>	<p style="text-align: right;">Page 144</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. The cell phone number of Jerry</p> <p>4 Hsieh of PLDS was 939-219-337. Correct?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Turn to the third page of this</p> <p>10 document, which I am representing to you is</p> <p>11 Jerry Hsieh's cell phone records.</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 Q. On April 8, 2008, you called</p> <p>14 Jerry Hsieh on his cell phone. Correct?</p> <p>15 MR. WALTER: Objection.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. You spoke with him at 4:43 p.m.</p> <p>20 for approximately eight minutes. Correct?</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Turn to the fourth page of the</p> <p>25 document, please, sir.</p>
<p style="text-align: right;">Page 143</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Bates-numbered Quanta_HAW_47514, marked</p> <p>3 for identification, as of this date.)</p> <p>4 A. (Document review.)</p> <p>5 Q. This is an e-mail string dated</p> <p>6 December 19, 2008, between you and Sunny Wong.</p> <p>7 Correct?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And in this e-mail string, you</p> <p>12 state that your cell phone number was</p> <p>13 0-93-09-15-541. Correct?</p> <p>14 MR. WALTER: Objection.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: Could the court</p> <p>19 reporter please provide the witness with</p> <p>20 Exhibit 401, a document Bates-numbered</p> <p>21 ODDCIV-005418232.</p> <p>22 (Plaintiffs' Exhibit 401,</p> <p>23 Document Bates-numbered</p> <p>24 ODDCIV-005418232, marked for</p> <p>25 identification, as of this date.)</p>	<p style="text-align: right;">Page 145</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 On May 15, 2008, you called or</p> <p>3 received a call from Jerry Hsieh. Correct?</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. You spoke with him for -- at 7:29</p> <p>8 p.m., for approximately eight minutes.</p> <p>9 Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: Could the court</p> <p>15 reporter please provide the witness with</p> <p>16 Exhibit 402, which is a document</p> <p>17 Bates-numbered ODDCIV-005385654.</p> <p>18 (Plaintiffs' Exhibit 402,</p> <p>19 Document Bates-numbered</p> <p>20 ODDCIV-005385654, marked for</p> <p>21 identification, as of this date.)</p> <p>22 A. (Document review.)</p> <p>23 Q. Sir, please turn to the fourth</p> <p>24 page of this document. And again, these are</p> <p>25 the phone records of Jerry Hsieh.</p>

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<p style="text-align: right;">Page 146</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 On March 4, 2008, you called or</p> <p>3 received a call from Jerry Hsieh. Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And the call occurred at 9:48</p> <p>9 a.m. and lasted over two minutes. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And you spoke with Mr. Hsieh</p> <p>15 again at 10:14 a.m. the same day. Correct?</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And that second call lasted over</p> <p>20 three minutes, didn't it, sir?</p> <p>21 MR. WALTER: Objection.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Turn to the sixth page of this</p>	<p style="text-align: right;">Page 148</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Isn't it true that you discussed</p> <p>7 pricing on the Acer account with your</p> <p>8 competitors?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. You discussed pricing with --</p> <p>14 strike that.</p> <p>15 Specifically, you discussed</p> <p>16 pricing on the Acer account with PLDS</p> <p>17 employees. Correct?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And you discussed pricing on the</p> <p>22 Acer account with representatives of TSST</p> <p>23 Korea. Correct?</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 147</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 document, please, sir, ending in the Bates</p> <p>3 number 5385659.</p> <p>4 Isn't it true, sir, that on April</p> <p>5 8, 2008, you also called or received a call</p> <p>6 from Jerry Hsieh of PLDS?</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And the call occurred at 4:43</p> <p>11 p.m. and lasted over eight minutes, didn't it,</p> <p>12 sir?</p> <p>13 MR. WALTER: Objection.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. Please turn to the ninth page of</p> <p>18 the document, the page ending in 5385662.</p> <p>19 On May 21, 2008, you spoke again</p> <p>20 with Mr. Hsieh of PLDS. Correct?</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And you spoke with Mr. Hsieh at</p> <p>25 5:39 p.m., for over seven minutes. Correct?</p>	<p style="text-align: right;">Page 149</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 Q. On July 18, 2008, you met with</p> <p>5 sales employees from PLDS and discussed the</p> <p>6 Acer account. Correct?</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Could the court</p> <p>11 reporter please provide the witness with</p> <p>12 Exhibit 403 and 403-A, document Bates</p> <p>13 number Quanta_HAW_16940.</p> <p>14 (Plaintiffs' Exhibit 403, E-mail</p> <p>15 dated July 15, 2008, from Wesley Cheng</p> <p>16 to Shang Hao Chen and others,</p> <p>17 Bates-numbered Quanta_HAW_16940, marked</p> <p>18 for identification, as of this date.)</p> <p>19 (Plaintiffs' Exhibit 403-A,</p> <p>20 English translation of Exhibit 403,</p> <p>21 marked for identification, as of this</p> <p>22 date.)</p> <p>23 A. (Document review.)</p> <p>24 Q. This is an e-mail from Wesley</p> <p>25 Cheng of QSI to you and others, dated July 15,</p>

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<p style="text-align: right;">Page 150</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 2008. Correct?</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And in the third e-mail on this</p> <p>7 chain, the one that begins at the bottom of</p> <p>8 the first page, on July 15, 2008, you e-mailed</p> <p>9 Jerry Hsieh of PLDS and informed him that you</p> <p>10 were the account manager for Acer. Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. On the second page of the</p> <p>16 document, you state that the "HP account</p> <p>17 manager is on a trip. She cannot join us this</p> <p>18 time. Shu-Ming for Dell and myself, sales for</p> <p>19 Acer, will join the lunch."</p> <p>20 Correct?</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. You attended this lunch with</p> <p>25 PLDS. Correct?</p>	<p style="text-align: right;">Page 152</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. And this, sir, is an e-mail from</p> <p>4 you to Evon Yu of QSI, dated July 18, 2008.</p> <p>5 Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And you, sir, said, "Yesterday, I</p> <p>11 had a meal with people from PLDS," didn't you?</p> <p>12 MR. WALTER: Objection.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And in this e-mail, you tell</p> <p>17 Mr. Yu that you discussed strategy for</p> <p>18 increasing pull rates on the Acer account with</p> <p>19 PLDS. Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And pull rate is the actual</p> <p>25 volume of optical disk drives purchased by</p>
<p style="text-align: right;">Page 151</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. At this lunch, you discussed</p> <p>7 sensitive business information on the Acer</p> <p>8 account with PLDS, didn't you, sir?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 MS. SCARLETT: Could the court</p> <p>14 reporter please provide the witness with</p> <p>15 Exhibit 404 and 404-A, a document</p> <p>16 Bates-stamped Quanta_HAW_3565.</p> <p>17 (Plaintiffs' Exhibit 404, E-mail</p> <p>18 dated July 18, 2008, from Shang Hao Chen</p> <p>19 to Evon Yu, Bates-numbered</p> <p>20 Quanta_HAW_3565, marked for</p> <p>21 identification, as of this date.)</p> <p>22 (Plaintiffs' Exhibit 404-A,</p> <p>23 English translation of Exhibit 404,</p> <p>24 marked for identification, as of this</p> <p>25 date.)</p>	<p style="text-align: right;">Page 153</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Acer. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Your employees would also collect</p> <p>8 information from competitors regarding the</p> <p>9 Acer account and report it to you, wouldn't</p> <p>10 they, sir?</p> <p>11 MR. WALTER: Objection.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And you took this information</p> <p>16 into account when setting prices on the Acer</p> <p>17 account. Right?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. For example, in November, 2008,</p> <p>22 Sally Huang reported to you information from</p> <p>23 PLDS and HLDS regarding prices of your</p> <p>24 competitors on the Acer account. Correct?</p> <p>25 MR. WALTER: Objection; form.</p>

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<p style="text-align: right;">Page 154</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 MS. SCARLETT: Could the court</p> <p>6 reporter please provide the witness with</p> <p>7 Exhibit 405 and 405-A, document Bates</p> <p>8 number Quanta_HAW_43019.</p> <p>9 (Plaintiffs' Exhibit 405, E-mail</p> <p>10 dated November 21, 2008, from Sally</p> <p>11 Huang to Shang Hao Chen, Bates-numbered</p> <p>12 Quanta_HAW_43019, marked for</p> <p>13 identification, as of this date.)</p> <p>14 (Plaintiffs' Exhibit 405-A,</p> <p>15 English translation of Exhibit 405,</p> <p>16 marked for identification, as of this</p> <p>17 date.)</p> <p>18 A. (Document review.)</p> <p>19 Q. This is an e-mail from Sally</p> <p>20 Huang to you, dated November 21, 2008.</p> <p>21 Correct?</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And Ms. Huang in this e-mail</p>	<p style="text-align: right;">Page 156</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And based on this information,</p> <p>5 Ms. Huang recommended to you, "I believe we</p> <p>6 can quote \$24.40."</p> <p>7 Correct?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. The "Ambrose" reference in this</p> <p>12 e-mail is Ambrose Song, who worked for Acer.</p> <p>13 Correct?</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. In October 2008, Sally Huang</p> <p>18 reported to you that she had spoken with PLDS</p> <p>19 on the Acer account. Correct?</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 MS. SCARLETT: Could the court</p> <p>24 reporter please provide the witness with</p> <p>25 Exhibit 406 and 406-A, a document</p>
<p style="text-align: right;">Page 155</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 informs you that "The following info is what I</p> <p>3 gathered from a couple of companies."</p> <p>4 Correct?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Ms. Huang said to you, "HLDS:</p> <p>10 They said there's no way they would quote</p> <p>11 lower than \$24. Their current quote is less</p> <p>12 than \$24.50."</p> <p>13 Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And Ms. Huang wrote, "PLDS:</p> <p>19 Their current quote is more than \$24.50.</p> <p>20 Their boss said that they need to be</p> <p>21 profitable. And they only make exceptions for</p> <p>22 HP."</p> <p>23 Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 157</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Bates-numbered Quanta_HAW_37747.</p> <p>3 (Plaintiffs' Exhibit 406, E-mail</p> <p>4 dated October 28, 2008, from Sally Huang</p> <p>5 to Shang Hao Chen, Bates-numbered</p> <p>6 Quanta_HAW_37747, marked for</p> <p>7 identification, as of this date.)</p> <p>8 (Plaintiffs' Exhibit 406-A,</p> <p>9 English translation of Exhibit 406,</p> <p>10 marked for identification, as of this</p> <p>11 date.)</p> <p>12 A. (Document review.)</p> <p>13 Q. This is an e-mail from Sally</p> <p>14 Huang to you, dated October 28, 2008.</p> <p>15 Correct?</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. In this e-mail, Ms. Huang informs</p> <p>20 you that PLDS said their share is</p> <p>21 approximately 10 percent for Acer projects.</p> <p>22 Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 158</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. The subject line of this e-mail</p> <p>4 refers to "STN projects." Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 MS. SCARLETT: Could the court</p> <p>9 reporter please provide the witness with</p> <p>10 Exhibit 407, a document Bates-numbered</p> <p>11 Quanta_HAW_8529.</p> <p>12 (Plaintiffs' Exhibit 407,</p> <p>13 Document Bates-numbered Quanta_HAW_8529,</p> <p>14 marked for identification, as of this</p> <p>15 date.)</p> <p>16 A. (Document review.)</p> <p>17 Q. This document reflects Quanta's</p> <p>18 account codes, does it not, sir?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And according to this document,</p> <p>24 "STN" is QSI's internal code for Acer, is it</p> <p>25 not?</p>	<p style="text-align: right;">Page 160</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. This is an e-mail from Evon Yu to</p> <p>4 you, dated December 3, 2008. Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. In this e-mail, Evon Yu reported</p> <p>9 to you that he had just called HLDS Bruce</p> <p>10 regarding the Acer account. Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And by "HLDS Bruce," he meant Dae</p> <p>16 Hwa (Bruce) Jeong of HLDS. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And Mr. Yu reported to you, "I</p> <p>22 just called HLDS Bruce. He said that their Q4</p> <p>23 quote is approximately \$24.50 and no rebate.</p> <p>24 He said that his company only pulled 70</p> <p>25 percent (FCST 350K to 400K)."</p>
<p style="text-align: right;">Page 159</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. In December 2008, your staff</p> <p>7 continued to talk to HLDS and PLDS regarding</p> <p>8 the Acer account. Correct, sir?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 MS. SCARLETT: Could the court</p> <p>14 reporter please provide the witness with</p> <p>15 Exhibit 408 and 408-A, a document</p> <p>16 Bates-numbered Quanta_HAW_45156.</p> <p>17 (Plaintiffs' Exhibit 408, E-mail</p> <p>18 dated December 3, 2008, from Evon Yu to</p> <p>19 Shang Hao Chen, Bates-numbered</p> <p>20 Quanta_HAW_45156, marked for</p> <p>21 identification, as of this date.)</p> <p>22 (Plaintiffs' Exhibit 408-A,</p> <p>23 English translation of Exhibit 408,</p> <p>24 marked for identification, as of this</p> <p>25 date.)</p>	<p style="text-align: right;">Page 161</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Correct?</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And Mr. Yu also informed you that</p> <p>7 for the first quarter of 2009, HLDS was</p> <p>8 quoting "about \$24 to Acer, but the quote was</p> <p>9 not final."</p> <p>10 Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And Mr. Yu said that HLDS would</p> <p>15 not quote under \$24 to Acer. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Further in this e-mail -- and I'm</p> <p>21 just looking for the page. Sorry. The third</p> <p>22 line of the e-mail on the first page, Mr. Yu</p> <p>23 states that "It's a bit ridiculous. Next time</p> <p>24 we need to bring the best desserts for</p> <p>25 Ambrose."</p>

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<p style="text-align: right;">Page 162</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Do you see that, sir?</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. The "Ambrose" referenced in this</p> <p>7 e-mail is Ambrose Song from Acer. Correct?</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. In December 2008, Quanta</p> <p>12 continued to speak with PLDS regarding</p> <p>13 marketing funds being provided to Acer.</p> <p>14 Correct?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 MS. SCARLETT: Could the court</p> <p>20 reporter please provide the witness with</p> <p>21 Exhibit 409 and 409-A, a document</p> <p>22 Bates-numbered Quanta_HAW_45535.</p> <p>23 (Plaintiffs' Exhibit 409, E-mail</p> <p>24 dated December 5, 2008, from Sally Huang</p> <p>25 to Shang Hao Chen and Evon Yu,</p>	<p style="text-align: right;">Page 164</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Specifically, Sally in Taiwan</p> <p>7 said "market fund," and the next entry says,</p> <p>8 "Has Ambrose mentioned it to you guys?"</p> <p>9 Do you see that, sir?</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And Susie responds later in the</p> <p>14 conversation, "To be honest, I am doing it</p> <p>15 right now."</p> <p>16 Do you see that, sir?</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And you, sir, were aware that</p> <p>21 your employees continued to speak with their</p> <p>22 competitors regarding the marketing fund to</p> <p>23 Acer?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 163</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Bates-numbered Quanta_HAW_45535, marked</p> <p>3 for identification, as of this date.)</p> <p>4 (Plaintiffs' Exhibit 409-A,</p> <p>5 English translation of Exhibit 409,</p> <p>6 marked for identification, as of this</p> <p>7 date.)</p> <p>8 A. (Document review.)</p> <p>9 Q. And this is an e-mail from Sally</p> <p>10 Huang to you and Evon Yu, dated December 5,</p> <p>11 2008. Correct?</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And in this e-mail, Sally Huang</p> <p>16 sent you an instant-messaging conversation</p> <p>17 that she had with Susie Peng of PLDS.</p> <p>18 Correct?</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And in that conversation, Sally</p> <p>23 Huang of QSI asked Susie Peng of PLDS if</p> <p>24 Ambrose had mentioned a market fund to PLDS.</p> <p>25 Correct?</p>	<p style="text-align: right;">Page 165</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 MS. SCARLETT: Could the court</p> <p>5 reporter please provide the witness with</p> <p>6 the document that was previously marked</p> <p>7 as Exhibit 27 and 27-A in the Bruce</p> <p>8 Jeong deposition, and it's Bates number</p> <p>9 Quanta_HAW_46718.</p> <p>10 A. (Document review.)</p> <p>11 Q. This is an e-mail from Sally</p> <p>12 Huang to you, dated December 15, 2008.</p> <p>13 Correct?</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And in this e-mail, Sally Huang</p> <p>18 reports meeting minutes with TSST Tango</p> <p>19 regarding the Acer account. Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And in this e-mail, "TSST Tango"</p> <p>25 refers to Chi-Wei Tango Lin of Yosun</p>

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<p style="text-align: right;">Page 166</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Industrial Corp. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 THE COURT REPORTER: I'm sorry,</p> <p>5 can you repeat what it stands for.</p> <p>6 MS. SCARLETT: Yeah, I'm going to</p> <p>7 spell it for you as well. TSST Tango</p> <p>8 refers to Chi-Wei. It's C-h-i-W-e-i</p> <p>9 Tango Lin of Yosun, Y-o-s-u-n,</p> <p>10 Industrial Corp.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And Tango was in charge of TSST's</p> <p>15 business in Taiwan. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Sally Huang reports to you that</p> <p>21 "HLDS Bruce asked Tango whether 20 M for</p> <p>22 market fund was given. Tango strongly denied.</p> <p>23 I asked Tango if it's 6 million. 6 million</p> <p>24 times \$1 each equals 6 million. He did not</p> <p>25 strongly deny."</p>	<p style="text-align: right;">Page 168</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And in this e-mail, Sally Huang</p> <p>3 reported to you that she had information from</p> <p>4 HLDS Bruce. Correct?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And by "HLDS Bruce," she meant</p> <p>10 Dae Hwa (Bruce) Jeong of HLDS. Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And she informed you that HLDS</p> <p>15 had a deal with Acer for 20 percent share for</p> <p>16 all slim ODDs. Correct?</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And she informed you that HLDS</p> <p>21 Bruce had told her that HLDS's quotation to</p> <p>22 second-tier ODMs under US \$24. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 167</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And the "HLDS Bruce" in this</p> <p>7 document was Dae Hwa (Bruce) Jeong of HLDS.</p> <p>8 Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 MS. SCARLETT: Could the court</p> <p>14 reporter please provide the witness with</p> <p>15 what's been previously marked as Exhibit</p> <p>16 30 in the Jeong deposition, document</p> <p>17 Bates number Quanta_HAW_5793.</p> <p>18 A. (Document review.)</p> <p>19 Q. And this is an e-mail from Sally</p> <p>20 Huang to you, among others, dated January 16,</p> <p>21 2009. Correct?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 169</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: Could the court</p> <p>4 reporter please provide the witness with</p> <p>5 Exhibit 410 and 410-A, document Bates</p> <p>6 number Quanta_HAW_68974.</p> <p>7 (Plaintiffs' Exhibit 410, E-mail</p> <p>8 dated May 13, 2009, from Sally Huang to</p> <p>9 Shang Hao Chen and others,</p> <p>10 Bates-numbered Quanta_HAW_68974, marked</p> <p>11 for identification, as of this date.)</p> <p>12 (Plaintiffs' Exhibit 410-A,</p> <p>13 English translation of Exhibit 410,</p> <p>14 marked for identification, as of this</p> <p>15 date.)</p> <p>16 A. (Document review.)</p> <p>17 Q. This is an e-mail from Sally</p> <p>18 Huang to you and others, dated May 13, 2009.</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And in this e-mail, Ms. Huang</p> <p>25 informed you that "Susie asked us if we will</p>

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<p style="text-align: right;">Page 170</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 lower our price for Q3."</p> <p>3 Correct?</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And by "Susie," she meant Susie</p> <p>8 Peng of PLDS. Correct?</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And she also said that Susie told</p> <p>13 her that HLDS told them that they do not want</p> <p>14 to lower the price. Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And the subject of this e-mail is</p> <p>19 "Q3 quotation for STN."</p> <p>20 Correct?</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And "STN" is Acer. Correct?</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 172</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 to you, dated September 24, 2008. Correct?</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Please turn to the second page of</p> <p>7 the document, sir.</p> <p>8 This is an e-mail from Tomomi</p> <p>9 Yamada of Sony NEC Optiarc, cc'd to you, and</p> <p>10 dated September 24, 2008. Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And in this e-mail, you received</p> <p>15 a report from Mr. Yamada regarding the pricing</p> <p>16 for drives being sold to Lenovo. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Mr. Yamada told you the prices of</p> <p>22 Panasonic, HLDS, and TSST. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 171</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. You also discussed pricing on the</p> <p>5 Lenovo account with your competitors.</p> <p>6 Correct?</p> <p>7 MR. WALTER: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 MS. SCARLETT: Could the court</p> <p>12 reporter please give the witness Exhibit</p> <p>13 411 and 411-A, document Bates-stamped</p> <p>14 Quanta_HAW_32015.</p> <p>15 (Plaintiffs' Exhibit 411, E-mail</p> <p>16 dated September 24, 2008, from Shi-chi</p> <p>17 Ho to Shang Hao Chen, Bates-numbered</p> <p>18 Quanta_HAW_32015, marked for</p> <p>19 identification, as of this date.)</p> <p>20 (Plaintiffs' Exhibit 411-A,</p> <p>21 English translation of Exhibit 411,</p> <p>22 marked for identification, as of this</p> <p>23 date.)</p> <p>24 A. (Document review.)</p> <p>25 Q. This is an e-mail from Shi-chi Ho</p>	<p style="text-align: right;">Page 173</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Specifically, Mr. Yamada stated,</p> <p>4 "PANA, October closer to \$27.5, November less</p> <p>5 than \$27 (with new model.) HLDS, October</p> <p>6 almost same as our price, \$27.90. TSST, less</p> <p>7 than \$25."</p> <p>8 Isn't that correct, sir?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And after you provided this</p> <p>14 information to the president of Quanta</p> <p>15 Storage, Shi-chi Ho, he told you to wait</p> <p>16 before lowering QSI's price to see the</p> <p>17 response of HLDS and Panasonic. Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Turning to page 1 of the</p> <p>23 document, specifically, sir, he said, "I think</p> <p>24 we may watch HLDS and Panasonic's response."</p> <p>25 Correct?</p>

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<p style="text-align: right;">Page 174</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. You're aware of an</p> <p>7 industry-reporting service called TSR.</p> <p>8 Correct, sir?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Your employees asked other ODD</p> <p>14 suppliers not to provide aggressive prices to</p> <p>15 TSR. Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 THE VIDEOGRAPHER: This is the</p> <p>21 videographer. When you get close to a</p> <p>22 breaking point, we need to change tape</p> <p>23 in a few more minutes.</p> <p>24 MS. SCARLETT: One more question,</p> <p>25 and then we can take a break.</p>	<p style="text-align: right;">Page 176</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 to Gina Liu and Sally Huang,</p> <p>3 Bates-numbered Quanta_HAW_2376, marked</p> <p>4 for identification, as of this date.)</p> <p>5 BY MS. SCARLETT:</p> <p>6 Q. This is an e-mail from you to</p> <p>7 Gina Liu and Sally Huang, dated July 29, 2008.</p> <p>8 Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Turn to the third page of this</p> <p>14 document, please, sir.</p> <p>15 In the e-mail dated July 25,</p> <p>16 2008, at 4:09 p.m., Sally Huang e-mailed Sony</p> <p>17 NEC Optiarc employees and said, "Please don't</p> <p>18 make any promise to Lenovo that we will follow</p> <p>19 TSR price trends. Also, I informed other ODD</p> <p>20 makers to make same complain to TSR. Could</p> <p>21 you ask your marketing to not provide</p> <p>22 aggressive price to TSR."</p> <p>23 Do you see that, sir?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 175</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And this was because on some</p> <p>3 occasions, customers would look at the TSR</p> <p>4 reports and use it for pricing guidelines.</p> <p>5 Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Okay. We can take</p> <p>11 a short break.</p> <p>12 THE VIDEOGRAPHER: The time now</p> <p>13 is 3:41 p.m. This concludes Tape 4.</p> <p>14 We're going off the video record.</p> <p>15 (Recess taken from 3:41 p.m. to</p> <p>16 3:57 p.m.)</p> <p>17 THE VIDEOGRAPHER: The time now</p> <p>18 is 3:57 p.m. This begins Tape 5. We're</p> <p>19 back on the record with Shang Hao Chen.</p> <p>20 MS. SCARLETT: Could the court</p> <p>21 reporter please provide the witness with</p> <p>22 Exhibit 412, document Bates number</p> <p>23 Quanta_HAW_2376.</p> <p>24 (Plaintiffs' Exhibit 412, E-mail</p> <p>25 dated July 29, 2008, from Shang Hao Chen</p>	<p style="text-align: right;">Page 177</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. You were included on this</p> <p>5 request, weren't you, sir?</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Isn't it true that meetings were</p> <p>10 held between high-level employees at Quanta</p> <p>11 Storage and Panasonic entities?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Isn't it true that in September</p> <p>17 2008, the president of Quanta Storage, Shi-chi</p> <p>18 Ho, met with the president of Panasonic</p> <p>19 Industrial Sales Taiwan, Wu Chung Tounq?</p> <p>20 That's spelled W-u, C-h-u-n-g, T-o-u-n-g.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 MS. SCARLETT: Could the court</p> <p>25 reporter please provide the witness with</p>

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<p style="text-align: right;">Page 178</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Exhibit 413 and 413-A, document</p> <p>3 Bates-numbered Quanta_HAW_32277.</p> <p>4 (Plaintiffs' Exhibit 413, E-mail</p> <p>5 dated September 25, 2008, from Shi-chi</p> <p>6 Ho to Shang Hao Chen, Bates-numbered</p> <p>7 Quanta_HAW_32277, marked for</p> <p>8 identification, as of this date.)</p> <p>9 (Plaintiffs' Exhibit 413-A,</p> <p>10 English translation of Exhibit 413,</p> <p>11 marked for identification, as of this</p> <p>12 date.)</p> <p>13 A. (Document review.)</p> <p>14 Q. This is an e-mail from Shi-chi Ho</p> <p>15 to you, dated September 25, 2008. Correct?</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And in the second e-mail down</p> <p>20 this chain, on September 24, 2008, you</p> <p>21 informed the president of Quanta Storage,</p> <p>22 Shi-chi Ho, of the prices of your competitor</p> <p>23 on "second-tier customers."</p> <p>24 Correct?</p> <p>25 MR. WALTER: Objection; form.</p>	<p style="text-align: right;">Page 180</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 THE COURT REPORTER: Can you</p> <p>3 repeat your question, please.</p> <p>4 Q. You provided Mr. Ho with</p> <p>5 Panasonic's prices to NEO. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. "NEO" is Sony VAIO. Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And on September 25, 2008, Mr. Ho</p> <p>15 informed you that he would have a chat with</p> <p>16 Panasonic's president, Dong Dong, this</p> <p>17 afternoon, didn't he?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And by "Panasonic's president</p> <p>23 Dong Dong," you understood Mr. Ho to be</p> <p>24 referring to Wu Chung Toun, the president of</p> <p>25 Panasonic Industrial Sales Taiwan. Correct?</p>
<p style="text-align: right;">Page 179</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And specifically, you provided</p> <p>6 him with TSST's prices for VOL, MSI, and OWN.</p> <p>7 Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. MSI is an ODM. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And "OWN" is Quanta Computer,</p> <p>18 Inc. Correct?</p> <p>19 MR. WALTER: Objection.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And you provided Mr. Ho with</p> <p>24 prices from Panasonic to Quanta Computer.</p> <p>25 Correct?</p>	<p style="text-align: right;">Page 181</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And later that day on September</p> <p>6 25, 2008, Mr. Ho sent you an e-mail</p> <p>7 summarizing pricing information from</p> <p>8 Panasonic. Correct?</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 MS. SCARLETT: Could the court</p> <p>13 reporter please give the witness Exhibit</p> <p>14 414, a document Bates number</p> <p>15 Quanta_HAW_32401.</p> <p>16 (Plaintiffs' Exhibit 414, E-mail</p> <p>17 dated September 25, 2008, from Shi-chi</p> <p>18 Ho to Shang Hao Chen, Bates-numbered</p> <p>19 Quanta_HAW_32401, marked for</p> <p>20 identification, as of this date.)</p> <p>21 A. (Document review.)</p> <p>22 Q. This is an e-mail from Shi-chi Ho</p> <p>23 to you, dated September 25, 2008. Is that</p> <p>24 correct, sir?</p> <p>25 A. On advice of my counsel, I invoke</p>

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<p style="text-align: right;">Page 182</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And Shi-chi Ho writes to you,</p> <p>5 "Dear Haw, 1, what I got was OWN at PCC to</p> <p>6 quote under \$25 because QSI price is under</p> <p>7 \$25. PCC will quote \$25 for OWN."</p> <p>8 Isn't that correct, sir?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And again, "OWN" is Quanta's</p> <p>14 internal code for Quanta Computer. Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And Mr. Ho also reported to you</p> <p>19 that "NEO was quoted by Japan's side. PCC</p> <p>20 only ships around 300K to 400K/M 12.7</p> <p>21 millimeter tray DVD read-write now because</p> <p>22 cost is not competitive."</p> <p>23 Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 184</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Quanta Storage. Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 MS. SCARLETT: Could the court</p> <p>8 reporter please provide the witness with</p> <p>9 Exhibit 415, which is a document</p> <p>10 Bates-numbered Q786325.</p> <p>11 (Plaintiffs' Exhibit 415, E-mail</p> <p>12 dated July 22, 2008, from Wesley Cheng</p> <p>13 to Shang Hao Chen and others,</p> <p>14 Bates-numbered Q786325, marked for</p> <p>15 identification, as of this date.)</p> <p>16 A. (Document review.)</p> <p>17 Q. This is an e-mail from Wesley</p> <p>18 Cheng to you, among others, dated July 22,</p> <p>19 2008. Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And this e-mail reflects a</p> <p>25 meeting with PAVC Sales on January 28, 2008.</p>
<p style="text-align: right;">Page 183</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And "NEO" is Quanta's internal</p> <p>5 code for Sony VAIO. Correct?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. You often gained information</p> <p>11 through competitors who sold component parts</p> <p>12 of optical disk drives, like optical pickup</p> <p>13 units. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Optical pickup units are also</p> <p>19 called OPUs. Correct?</p> <p>20 MR. WALTER: Objection.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. For example, in January 2008,</p> <p>25 Panasonic employees from PAVC came to visit</p>	<p style="text-align: right;">Page 185</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And "PAVC" is Panasonic AVC</p> <p>8 Networks Company. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And included on the agenda for</p> <p>14 this meeting is information exchange.</p> <p>15 Correct?</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Isn't it true that you would pass</p> <p>20 information received from Panasonic regarding</p> <p>21 OPU's suppliers to other competitors as well?</p> <p>22 MR. WALTER: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 186</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MS. SCARLETT: Could the reporter</p> <p>3 please provide the witness with Exhibit</p> <p>4 416 and 416-A, document Bates-numbered</p> <p>5 SOA_CIV_353598.</p> <p>6 (Plaintiffs' Exhibit 416,</p> <p>7 Document Bates-numbered SOA_CIV_353598,</p> <p>8 marked for identification, as of this</p> <p>9 date.)</p> <p>10 (Plaintiffs' Exhibit 416-A,</p> <p>11 English translation of Exhibit 416,</p> <p>12 marked for identification, as of this</p> <p>13 date.)</p> <p>14 A. (Document review.)</p> <p>15 Q. In March 2008, you spoke with</p> <p>16 Shinichi Yamamora of Sony NEC Optiarc.</p> <p>17 Correct?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. In March 2008, you spoke with</p> <p>22 Masufumi Amino of Sony NEC Optiarc. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 188</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 to Shang Hao Chen and others,</p> <p>3 Bates-numbered Quanta_HA_61521, marked</p> <p>4 for identification, as of this date.)</p> <p>5 A. (Document review.)</p> <p>6 Q. And this is an e-mail from Wesley</p> <p>7 Cheng to you, among others, dated April 1,</p> <p>8 2009. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And in this e-mail, Wesley Cheng</p> <p>14 informs you that he met with Sony OPU last</p> <p>15 week. Correct?</p> <p>16 MR. WALTER: Object to the form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And Sony OPU Sales provided</p> <p>21 Mr. Cheng of QSI with information regarding</p> <p>22 their ODD competitors. Correct?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 187</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And you informed Mr. Amino that</p> <p>4 Panasonic OP Sales had told you that they were</p> <p>5 selling 500K units per month to Panasonic and</p> <p>6 500K units per month to outside sales,</p> <p>7 including 200K units to Pioneer for the slim</p> <p>8 Blu-Ray drive. Correct?</p> <p>9 MR. WALTER: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. "Panasonic OP Sales" referred to</p> <p>14 here is sales of OPUs by Panasonic entities.</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 MS. SCARLETT: Could the court</p> <p>21 reporter please provide the witness with</p> <p>22 Exhibit 417, a document Bates-numbered</p> <p>23 Quanta_HA_61521 plus its attachments.</p> <p>24 (Plaintiffs' Exhibit 417, E-mail</p> <p>25 dated April 1, 2009, from Wesley Cheng</p>	<p style="text-align: right;">Page 189</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And Sony OPU provided QSI with</p> <p>4 pricing information on both Optiarc and HLDS</p> <p>5 for OPUs. Correct?</p> <p>6 MR. WALTER: Objection.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And Sony OPU shared with</p> <p>11 Mr. Cheng that Blu-Ray write drives were</p> <p>12 priced at around \$160 for Panasonic. Correct?</p> <p>13 MR. WALTER: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And Sony OPU Sales also provided</p> <p>18 Mr. Cheng with Pioneer's pricing on these</p> <p>19 Blu-Ray drives, which was 140 to \$145.</p> <p>20 Correct?</p> <p>21 MR. WALTER: Objection to form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. You also held frequent</p>

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<p style="text-align: right;">Page 190</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 discussions with employees of Pioneer.</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You reached agreements with</p> <p>9 Pioneer to minimize competition. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: Could the court</p> <p>15 reporter please provide the witness with</p> <p>16 Exhibit 418 and 418-A, document</p> <p>17 Bates-numbered Quanta_HAW_51033.</p> <p>18 (Plaintiffs' Exhibit 418, E-mail</p> <p>19 dated January 19, 2009, from Sally Huang</p> <p>20 to Shang Hao Chen, Bates-numbered</p> <p>21 Quanta_HAW_51033, marked for</p> <p>22 identification, as of this date.)</p> <p>23 (Plaintiffs' Exhibit 418-A,</p> <p>24 English translation of Exhibit 418,</p> <p>25 marked for identification, as of this</p>	<p style="text-align: right;">Page 192</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: Could the court</p> <p>4 reporter please give the witness Exhibit</p> <p>5 419, a document Bates-stamped</p> <p>6 Quanta_HAW_51284.</p> <p>7 (Plaintiffs' Exhibit 419,</p> <p>8 Document Bates-numbered</p> <p>9 Quanta_HAW_51284, marked for</p> <p>10 identification, as of this date.)</p> <p>11 A. (Document review.)</p> <p>12 Q. The second e-mail on this page is</p> <p>13 an e-mail from you, dated January 20, 2009.</p> <p>14 Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And the subject of this e-mail is</p> <p>19 "discussion with Pioneer."</p> <p>20 Correct?</p> <p>21 MR. WALTER: Objection.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And you write in this e-mail,</p>
<p style="text-align: right;">Page 191</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 date.)</p> <p>3 A. (Document review.)</p> <p>4 Q. This is an e-mail from Sally</p> <p>5 Huang to you, dated January 19, 2009.</p> <p>6 Correct?</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And on January 19, 2009, Sally</p> <p>11 Huang asked you in connection with a</p> <p>12 procurement event for HP, "Can you work out</p> <p>13 some kind of agreement with Pioneer not to be</p> <p>14 too extreme. They only have approximately</p> <p>15 400K left. No reason for them to fight for</p> <p>16 third place. Right?"</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And, in fact, you did speak with</p> <p>21 Pioneer regarding this HP event, didn't you,</p> <p>22 sir?</p> <p>23 MR. WALTER: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 193</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 "Pioneer JPN told me that their last number to</p> <p>3 HP is quite limited. They are discussing with</p> <p>4 HP to consume them and expecting can be</p> <p>5 consumed by Feb/March time frame. It seems to</p> <p>6 me they don't need to join Ebid."</p> <p>7 Correct, sir?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And your conclusion after the</p> <p>13 conversation with Pioneer was that you would</p> <p>14 not be competing with them in the HP event.</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And you also state in this e-mail</p> <p>21 that "PCC confirmed that they were already out</p> <p>22 of the HP business. No chance to join Ebid."</p> <p>23 Correct?</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 194</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And by "PCC," you were referring</p> <p>4 to Panasonic. Correct?</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. QSI also exchanged nonpricing</p> <p>9 information with its competitors. Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. But it also considered this</p> <p>15 information to be competitively sensitive,</p> <p>16 didn't it, sir?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Could the court</p> <p>22 reporter please give the witness Exhibit</p> <p>23 420, a document Bates-numbered Q252330.</p> <p>24 (Plaintiffs' Exhibit 420, E-mail</p> <p>25 dated October 5, 2007, from Shu-ming</p>	<p style="text-align: right;">Page 196</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 share with its customers.</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Dell scored competitors using a</p> <p>9 QBR score that was important in the final</p> <p>10 placement at Dell procurement events.</p> <p>11 Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And you collected the QBR scores</p> <p>17 of your competitors. Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 MS. SCARLETT: Could the court</p> <p>23 reporter please provide the witness with</p> <p>24 Exhibit 421, which is a document</p> <p>25 Bates-numbered SOA_CIV_355854.</p>
<p style="text-align: right;">Page 195</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Tzeng to Sony NEC Optiarc employees and</p> <p>3 Shang Hao Chen, Bates-numbered Q252330,</p> <p>4 marked for identification, as of this</p> <p>5 date.)</p> <p>6 A. (Document review.)</p> <p>7 Q. This is an e-mail from Shu-ming</p> <p>8 Tzeng to Sony NEC Optiarc employees and you,</p> <p>9 dated October 5, 2007. Correct?</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And in this document, Shu-ming</p> <p>14 Tzeng states that "Cost is very sensitive. We</p> <p>15 don't want to show the real cost and just show</p> <p>16 the percentage."</p> <p>17 Correct?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And so even though QSI would</p> <p>23 confirm with its competitors the cost of</p> <p>24 component parts of the optical disk drive, it</p> <p>25 considered this information too sensitive to</p>	<p style="text-align: right;">Page 197</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 (Plaintiffs' Exhibit 421, E-mail</p> <p>3 dated December 13, 2007, from Tomio Sato</p> <p>4 to Shang Hao Chen, and attachment,</p> <p>5 Bates-numbered SOA_CIV_355854, marked</p> <p>6 for identification, as of this date.)</p> <p>7 A. (Document review.)</p> <p>8 Q. This is an e-mail that you</p> <p>9 received from Tomio Sato of Sony NEC Optiarc,</p> <p>10 dated December 13, 2007. Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And this e-mail attaches a chart</p> <p>16 of the QBR scores of your competitors.</p> <p>17 Correct?</p> <p>18 MR. WALTER: Objection.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And in this e-mail, Mr. Sato</p> <p>23 informs you that all scores were "verified and</p> <p>24 confirmed, with the exception of TST," which</p> <p>25 was an estimation.</p>

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<p style="text-align: right;">Page 198</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And you understood that he had</p> <p>8 verified these scores with your competitors.</p> <p>9 Correct?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And you were aware, sir, it was</p> <p>15 improper for you to have these scores.</p> <p>16 Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Could the court</p> <p>22 reporter please provide the witness with</p> <p>23 Exhibit 422, a document Bates-numbered</p> <p>24 Quanta_HAW_609.</p> <p>25 (Plaintiffs' Exhibit 422, E-mail</p>	<p style="text-align: right;">Page 200</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And another way to reach</p> <p>5 agreement with your competitors was to reach</p> <p>6 consensus on refusing to change the price in</p> <p>7 response to a supplier's request. Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 MS. SCARLETT: Could the court</p> <p>13 reporter please give the witness Exhibit</p> <p>14 423, a document Bates-numbered Q254883.</p> <p>15 (Plaintiffs' Exhibit 423, E-mail</p> <p>16 dated April 3, 2008, from Shu-ming Tzeng</p> <p>17 to Vincent Chng, Shang Hao Chen and</p> <p>18 others, Bates-numbered Q254883, marked</p> <p>19 for identification, as of this date.)</p> <p>20 A. (Document review.)</p> <p>21 Q. This is an e-mail from Shu-ming</p> <p>22 Tzeng to Vincent Chng of Sony NEC Optiarc and</p> <p>23 you, among others, dated April 3, 2008.</p> <p>24 Correct?</p> <p>25 MR. WALTER: Objection; form.</p>
<p style="text-align: right;">Page 199</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 dated December 15, 2007, from Shang Hao</p> <p>3 Chen to Voka Chen, Bates-numbered</p> <p>4 Quanta_HAW_609, marked for</p> <p>5 identification, as of this date.)</p> <p>6 A. (Document review.)</p> <p>7 Q. This is an e-mail from you to</p> <p>8 Voka Chen, dated December 15, 2007.</p> <p>9 Correct?</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And in this e-mail you state,</p> <p>14 "Let me clarify the QBR ranking again. Last</p> <p>15 time Dell GCM sent all supplier scores to us</p> <p>16 by mistake."</p> <p>17 Correct, sir?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And so you were aware, sir, that</p> <p>22 Dell would not have directly provided you with</p> <p>23 these QBR scores on purpose. Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 201</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Please turn to page 3 of the</p> <p>6 document, sir.</p> <p>7 On April 1, 2008, Sony Optiarc</p> <p>8 received a request from Dell to provide the</p> <p>9 warranty cost breakdown for certain optical</p> <p>10 disk drives. Correct?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And Vincent Chng of Sony Optiarc</p> <p>16 forwarded this request to you, didn't he, sir?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Please turn to the second page of</p> <p>22 the document ending in Q254884, Please.</p> <p>23 In an e-mail starting halfway on</p> <p>24 this page, Vincent Chng of Sony Optiarc states</p> <p>25 he thought there was "a high possibility that</p>

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<p style="text-align: right;">Page 202</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Dell might want to consider reducing warranty</p> <p>3 period to get cost saving."</p> <p>4 Do you see that, sir?</p> <p>5 MR. WALTER: Object to the form.</p> <p>6 Object to the form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Please turn to the first page of</p> <p>11 the document.</p> <p>12 Do you see that Vincent Chng</p> <p>13 reported the next day, on April 2, 2008, that</p> <p>14 "Other suppliers (PLDS and HLDS) called me and</p> <p>15 informed that they also received similar</p> <p>16 requests from Tong Leong."</p> <p>17 Do you see that, sir?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And turning to the second page of</p> <p>23 this document again, Mr. Chng reported that</p> <p>24 PLDS and HLDS had told him that their idea is</p> <p>25 to inform Dell that warranty costs would be</p>	<p style="text-align: right;">Page 204</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 MS. SCARLETT: Could the court</p> <p>5 reporter please mark Exhibit 424,</p> <p>6 document Bates-numbered Quanta_HAW_5842.</p> <p>7 (Plaintiffs' Exhibit 424, E-mail</p> <p>8 dated May 15, 2008, from Shu-ming Tzeng</p> <p>9 to Vincent Chng, Shang Hao Chen and</p> <p>10 others, Bates-numbered Quanta_HAW_5842,</p> <p>11 marked for identification, as of this</p> <p>12 date.)</p> <p>13 A. (Document review.)</p> <p>14 Q. This is an e-mail dated May 15,</p> <p>15 2008, from Shu-ming Tzeng to Vincent Chng and</p> <p>16 you, among others. Correct?</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Turning to the second page of</p> <p>21 this document, in May 2008, Dell asked Sony</p> <p>22 NEC Optiarc to remove the 1 percent warranty</p> <p>23 cost altogether. Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 203</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 around 1 percent for a three years' warranty</p> <p>3 and hoped that all suppliers will be able to</p> <p>4 remain consistent in this reply so as to</p> <p>5 discourage Dell to remove/reduce warranty</p> <p>6 period."</p> <p>7 Do you see that, sir?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And turning back to the first</p> <p>13 page of the document, you received this e-mail</p> <p>14 report on April 3, 2008. Correct, sir?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And based on this communication</p> <p>20 with your competitors, Quanta Storage and Sony</p> <p>21 Optiarc agreed to propose a warranty cost of 1</p> <p>22 percent for three years to Dell, as your</p> <p>23 competitors suggested. Correct?</p> <p>24 MR. WALTER: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 205</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And Sony Optiarc forwarded this</p> <p>5 request on to you. Correct?</p> <p>6 MR. WALTER: Object to the form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Turning to the first page of the</p> <p>11 document, please, sir.</p> <p>12 Shu-ming Tzeng informed you and</p> <p>13 other Sony NEC Optiarc employees that she had</p> <p>14 spoken with "P Company regarding the request</p> <p>15 by Dell on warranty costs for certain ODDs."</p> <p>16 Correct, sir?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Ms. Tzeng informed you that she</p> <p>22 had talked to P Company. "They don't want to</p> <p>23 move anymore either."</p> <p>24 Correct?</p> <p>25 A. On advice of my counsel, I invoke</p>

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<p style="text-align: right;">Page 206</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And you understood that by "P</p> <p>5 Company," Ms. Tzeng was referring to PLDS.</p> <p>6 Correct?</p> <p>7 MR. WALTER: Objection.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And given this information,</p> <p>12 Ms. Tzeng recommended to you and Sony NEC</p> <p>13 Optiarc employees that Quanta and Sony should</p> <p>14 make no price concessions, except offering a</p> <p>15 5-cent removal for tray PATA drives. Correct?</p> <p>16 MR. WALTER: Objection.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. ODD suppliers also reached</p> <p>21 agreement on supplying free samples to HP.</p> <p>22 Correct?</p> <p>23 MR. WALTER: Objection.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 208</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 regarding HP's request for free samples.</p> <p>3 Correct?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And an HLDS employee had informed</p> <p>9 Caroline Lin that "T, H, P have temporarily</p> <p>10 reached a consensus. Will not compromise.</p> <p>11 Every ODD suppliers will accept a maximum free</p> <p>12 sample quantity from zero to 20. Currently we</p> <p>13 are offering the most, 20 pieces."</p> <p>14 Correct, sir?</p> <p>15 MR. WALTER: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. You understood that when Ms. Lin</p> <p>20 wrote "T," she was referring to TSST.</p> <p>21 Correct?</p> <p>22 MR. WALTER: Objection.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 207</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: I'd like to</p> <p>4 introduce Exhibit 425 and 425-A,</p> <p>5 document Bates number Quanta_HAW_56465.</p> <p>6 (Plaintiffs' Exhibit 425, E-mail</p> <p>7 dated February 23, 2009, from Sally</p> <p>8 Huang to Shang Hao Chen and others,</p> <p>9 Bates-numbered Quanta_HAW_56465, marked</p> <p>10 for identification, as of this date.)</p> <p>11 (Plaintiffs' Exhibit 425-A,</p> <p>12 English translation of Exhibit 425,</p> <p>13 marked for identification, as of this</p> <p>14 date.)</p> <p>15 A. (Document review.)</p> <p>16 Q. This is an e-mail dated February</p> <p>17 23, 2009, from Sally Huang to you and others.</p> <p>18 Correct?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. In the second e-mail on the first</p> <p>24 page, Caroline Lin of QSI informed you that on</p> <p>25 February 23, 2009, she had met with HLDS</p>	<p style="text-align: right;">Page 209</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And when Ms. Lin wrote "H," she</p> <p>3 was referring to HLDS. Correct?</p> <p>4 MR. WALTER: Objection to form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And when Ms. Lin wrote "P," she</p> <p>9 was referring to PLDS. Correct?</p> <p>10 MR. WALTER: Objection.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And when Ms. Lin wrote that these</p> <p>15 companies had reached a consensus, she meant</p> <p>16 an agreement. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Ms. Lin also wrote that</p> <p>22 "Therefore, I will currently still offer 15 to</p> <p>23 20 pieces as our best offer."</p> <p>24 Correct?</p> <p>25 MR. WALTER: Objection.</p>

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<p style="text-align: right;">Page 210</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And so Quanta also decided to</p> <p>6 abide by this agreement between competitors.</p> <p>7 Correct?</p> <p>8 MR. WALTER: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. QSI also collected the roadmaps</p> <p>13 of its competitors. Correct?</p> <p>14 MR. WALTER: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: I'd like to</p> <p>19 introduce Exhibit 426, document Bates</p> <p>20 number Q143765 plus its attachments.</p> <p>21 (Plaintiffs' Exhibit 426, E-mail</p> <p>22 dated October 24, 2008, from Hsu Hanes</p> <p>23 to Shang Hao Chen, plus attachments,</p> <p>24 Bates-numbered Q143765, marked for</p> <p>25 identification, as of this date.)</p>	<p style="text-align: right;">Page 212</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. Did QSI's roadmaps contain</p> <p>3 confidential information?</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Did QSI's roadmaps contain</p> <p>8 information that could be useful to another</p> <p>9 company hoping to beat Quanta to market with a</p> <p>10 new product or feature?</p> <p>11 MR. WALTER: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. You've traveled to the United</p> <p>16 States to meet with ODD customers. Correct?</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Isn't it true that in January</p> <p>21 2005, you met with Dell and Philips in Texas?</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 MS. SCARLETT: I'd like to</p>
<p style="text-align: right;">Page 211</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. This is an e-mail received by you</p> <p>4 on October 24, 2008, from Hsu Hanes. Correct?</p> <p>5 MR. WALTER: Objection.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Did QSI have an agreement to</p> <p>10 exchange roadmaps with its competitors?</p> <p>11 MR. WALTER: Objection.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Were QSI's roadmaps given to</p> <p>16 anybody who asked for one?</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Did QSI limit the distribution of</p> <p>21 roadmaps to a restricted set of customers?</p> <p>22 MR. WALTER: Objection.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 213</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 introduce Exhibit 427, document</p> <p>3 Bates-numbered Q13108.</p> <p>4 (Plaintiffs' Exhibit 427,</p> <p>5 Document Bates-numbered Q13108, marked</p> <p>6 for identification, as of this date.)</p> <p>7 A. (Document review.)</p> <p>8 Q. As reflected on the first page,</p> <p>9 this document was created for a meeting in</p> <p>10 Texas on January 27, 2005. Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Please turn to page 3 of this</p> <p>15 document, sir.</p> <p>16 You're listed here as a</p> <p>17 participant in this meeting, aren't you, sir?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. In July 2008, you traveled to the</p> <p>22 United States. Correct?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 214</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MS. SCARLETT: I'd like to</p> <p>3 introduce Exhibits 428 and 428-A,</p> <p>4 document Bates number Quanta_HAW_19504.</p> <p>5 (Plaintiffs' Exhibit 428, E-mail</p> <p>6 dated July 30, 2008, from Cheryl Cheng</p> <p>7 to Shang Hao Chen and others,</p> <p>8 Bates-numbered Quanta_HAW_19504, marked</p> <p>9 for identification, as of this date.)</p> <p>10 (Plaintiffs' Exhibit 428-A,</p> <p>11 English translation of Exhibit 428,</p> <p>12 marked for identification, as of this</p> <p>13 date.)</p> <p>14 A. (Document review.)</p> <p>15 Q. This is an e-mail from Cheryl</p> <p>16 Cheng to you, among others, dated July 30,</p> <p>17 2008. Correct?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And this document reflects your</p> <p>22 USA flight schedule. Correct?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 216</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 (Plaintiffs' Exhibit 429,</p> <p>3 PowerPoint document dated February 11,</p> <p>4 2009, Bates-numbered Quanta_HAW_102629,</p> <p>5 marked for identification, as of this</p> <p>6 date.)</p> <p>7 A. (Document review.)</p> <p>8 Q. This is a PowerPoint dated</p> <p>9 February 11, 2009, regarding a QSI business</p> <p>10 update. Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Please turn to the fourth page of</p> <p>15 this document, sir. It's titled "QSI Support</p> <p>16 Team."</p> <p>17 And this document reflects that</p> <p>18 Caroline Lin was an account manager for the HP</p> <p>19 account team. Correct?</p> <p>20 MR. WALTER: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And this specific page was last</p> <p>25 updated on December 1, 2008. Correct?</p>
<p style="text-align: right;">Page 215</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. And this document reflects that</p> <p>3 on July 30, you flew from Taipei to Los</p> <p>4 Angeles. Isn't that correct, sir?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And you, sir, were aware that</p> <p>10 Caroline Lin applied to the US for an E-2</p> <p>11 visa. Correct?</p> <p>12 MR. WALTER: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. In December 2008, Caroline Lin</p> <p>17 was an employee of Quanta Storage, Inc.</p> <p>18 Correct?</p> <p>19 MR. WALTER: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 MS. SCARLETT: I'd like to</p> <p>24 introduce Exhibit 429, document Bates</p> <p>25 number Quanta_HAW_102629.</p>	<p style="text-align: right;">Page 217</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Though Ms. Lin was an employee of</p> <p>7 Quanta Storage, Inc., on her visa application</p> <p>8 to the United States, Ms. Lin represented that</p> <p>9 she was employed by Quanta Computer, Inc.</p> <p>10 Correct?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: I'd like to</p> <p>15 introduce Exhibit 430, document</p> <p>16 Bates-numbered Q733081.</p> <p>17 (Plaintiffs' Exhibit 430, E-mail</p> <p>18 dated December 10, 2008, from Jessica</p> <p>19 Wang to Shang Hao Chen, Bates-numbered</p> <p>20 Q733081, marked for identification, as</p> <p>21 of this date.)</p> <p>22 A. (Document review.)</p> <p>23 Q. This is an e-mail from Jessica</p> <p>24 Wang, cc'd to you and dated December 10, 2008.</p> <p>25 Correct?</p>

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<p style="text-align: right;">Page 218</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Please turn to the page numbered</p> <p>7 Q733091.</p> <p>8 And this is a letter to support</p> <p>9 an E-2 visa application. Correct, sir?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And this document states that</p> <p>15 Ms. Lin is employed by Quanta Computer, Inc.</p> <p>16 as a section manager. Correct?</p> <p>17 MR. WALTER: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And the document states that</p> <p>22 Ms. Lin has expertise in the company's optical</p> <p>23 storage products. Correct?</p> <p>24 MR. WALTER: Objection.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 220</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 MS. SCARLETT: I'd like to</p> <p>6 introduce Exhibits 431 and 431-A, Bates</p> <p>7 number Quanta_HAW_49487.</p> <p>8 (Plaintiffs' Exhibit 431,</p> <p>9 Document Bates-numbered</p> <p>10 Quanta_HAW_49487, marked for</p> <p>11 identification, as of this date.)</p> <p>12 (Plaintiffs' Exhibit 431-A,</p> <p>13 English translation of Exhibit 431,</p> <p>14 marked for identification, as of this</p> <p>15 date.)</p> <p>16 THE VIDEOGRAPHER: This is the</p> <p>17 videographer. When you get to a good</p> <p>18 stopping point, I need to change the</p> <p>19 tape.</p> <p>20 MS. SCARLETT: Okay. Could you</p> <p>21 make it just through another set of two</p> <p>22 questions?</p> <p>23 THE VIDEOGRAPHER: Yes. That's</p> <p>24 fine.</p> <p>25 Q. This is an e-mail from you to</p>
<p style="text-align: right;">Page 219</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And the letter further states</p> <p>5 that Ms. Lin is to be employed by QCH, a US</p> <p>6 corporation located in Fremont, California,</p> <p>7 when she is in the United States. Correct?</p> <p>8 MR. WALTER: Objection.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Please turn the page to the Bates</p> <p>13 number Q733092, the next page.</p> <p>14 This letter states that "Since</p> <p>15 the majority of Quanta's customers are US</p> <p>16 corporations, the company is in great need to</p> <p>17 establish a US marketing and customer support</p> <p>18 center."</p> <p>19 Correct?</p> <p>20 MR. WALTER: Objection.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And Ms. Lin received her E-2 visa</p> <p>25 in early January 2009. Correct?</p>	<p style="text-align: right;">Page 221</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Maggie Chang, dated January 7, 2009. Correct?</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Please turn to the second page of</p> <p>7 the document.</p> <p>8 Down at the bottom there's an</p> <p>9 e-mail from Caroline Lin dated January 6,</p> <p>10 2009. Do you see that, sir?</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And turning to the third page of</p> <p>15 that document, Ms. Lin informs you and others,</p> <p>16 "I just got my passport back from AIT</p> <p>17 yesterday, and my E-2 visa is approved."</p> <p>18 Isn't that correct, sir?</p> <p>19 MR. WALTER: Object to the form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 MS. SCARLETT: This question is</p> <p>24 for the videographer: I have one</p> <p>25 exhibit left and about under ten</p>

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<p style="text-align: right;">Page 222</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 questions. Do we have enough tape left,</p> <p>3 or should we switch?</p> <p>4 THE VIDEOGRAPHER: Yeah, we're at</p> <p>5 the breaking point now. We're at six</p> <p>6 hours, and we're at the end of this</p> <p>7 tape.</p> <p>8 MS. SCARLETT: Okay. We can go</p> <p>9 off the record, then, shortly.</p> <p>10 THE VIDEOGRAPHER: Okay. The</p> <p>11 time now is 5:14 p.m. This concludes</p> <p>12 Tape 5. We're going off the video</p> <p>13 record.</p> <p>14 (Recess taken from 5:14 p.m. to</p> <p>15 5:26 p.m.)</p> <p>16 THE VIDEOGRAPHER: The time is</p> <p>17 now 5:26 p.m. This begins Tape 6.</p> <p>18 We're back on the record with Shang Hao</p> <p>19 Chen.</p> <p>20 BY MS. SCARLETT:</p> <p>21 Q. You understood, sir, that when</p> <p>22 QSI provided a price to HP, that it was one</p> <p>23 price for worldwide sales. Correct?</p> <p>24 MR. WALTER: Objection.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 224</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: I'd like to</p> <p>4 introduce Exhibit 432 and 432-A,</p> <p>5 document Bates-numbered QSI-SUB 1386856.</p> <p>6 (Plaintiffs' Exhibit 432, E-mail</p> <p>7 dated January 13, 2009, from Shang Hao</p> <p>8 Chen to Sally Huang and Shu-ming Tzeng,</p> <p>9 Bates-numbered QSI-SUB 1386856, marked</p> <p>10 for identification, as of this date.)</p> <p>11 (Plaintiffs' Exhibit 432-A,</p> <p>12 English translation of Exhibit 432,</p> <p>13 marked for identification, as of this</p> <p>14 date.)</p> <p>15 A. (Document review.)</p> <p>16 Q. This is an e-mail from you to</p> <p>17 Sally Huang and Shu-ming Tzeng, dated January</p> <p>18 13, 2009. Correct?</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. [REDACTED]</p> <p>23 [REDACTED]</p> <p>24 [REDACTED]</p> <p>25 [REDACTED]</p>
<p style="text-align: right;">Page 223</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And you understood, sir, that</p> <p>5 when QSI provided a price to Dell, that it was</p> <p>6 one price for worldwide sales?</p> <p>7 MR. WALTER: Objection.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And you understood that</p> <p>12 regardless of what kind of procurement event</p> <p>13 your customer was using, that they were</p> <p>14 interested in receiving the lowest price.</p> <p>15 Correct?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And you understood that OEMs like</p> <p>21 HP and Dell received better pricing than ODMs.</p> <p>22 Correct?</p> <p>23 MR. WALTER: Objection.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 225</p> <p>1 [REDACTED]</p> <p>2 [REDACTED]</p> <p>3 [REDACTED]</p> <p>4 [REDACTED]</p> <p>5 [REDACTED]</p> <p>6 [REDACTED]</p> <p>7 [REDACTED]</p> <p>8 [REDACTED]</p> <p>9 [REDACTED]</p> <p>10 A. [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED]</p> <p>13 MS. SCARLETT: Okay. That's all</p> <p>14 the questions that plaintiffs have.</p> <p>15 Thank you very much for your time,</p> <p>16 everyone.</p> <p>17 MR. REBLITZ-RICHARDSON: This is</p> <p>18 counsel for the Sony defendants. I will</p> <p>19 have a couple of questions, if</p> <p>20 plaintiffs are done.</p> <p>21 MS. SCARLETT: We are done.</p> <p>22 EXAMINATION BY</p> <p>23 MR. REBLITZ-RICHARDSON:</p> <p>24 Q. Good evening, Mr. Chen. My name</p> <p>25 is Beko Reblitz-Richardson. I represent Sony</p>

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<p style="text-align: right;">Page 226</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Optiarc, Inc.; Sony Optiarc America, Inc.;</p> <p>3 Sony Corporation; and Sony Electronics, Inc.</p> <p>4 Since 2004, have you ever been</p> <p>5 employed by Sony Optiarc America, Inc.?</p> <p>6 MR. WALTER: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Since 2004, have you ever been</p> <p>11 employed by Sony Optiarc, Inc.?</p> <p>12 MR. WALTER: Objection.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Since 2004, have you ever been</p> <p>17 employed by Sony Electronics, Inc.?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Since 2004, have you ever been</p> <p>22 employed by Sony Corporation?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 228</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Sony Optiarc, Inc.?</p> <p>3 MR. WALTER: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. During the 2004 through 2009 time</p> <p>8 period, did you personally participate in any</p> <p>9 HP or Dell procurement event?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. During the 2004 through 2009 time</p> <p>15 period, which QSI employees, if any,</p> <p>16 participated in one or more HP ODD procurement</p> <p>17 event?</p> <p>18 MR. WALTER: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. During the 2004 through 2009 time</p> <p>23 period, which QSI employees, if any,</p> <p>24 participated in one or more Dell ODD</p> <p>25 procurement events?</p>
<p style="text-align: right;">Page 227</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. When did QSI begin manufacturing</p> <p>3 ODDs for Sony Optiarc, Inc.?</p> <p>4 MR. WALTER: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Which ODDs did QSI manufacture</p> <p>9 for Sony Optiarc, Inc.?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Did QSI at some point design ODDs</p> <p>15 for Sony Optiarc, Inc.?</p> <p>16 MR. WALTER: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. When did QSI begin designing ODDs</p> <p>21 for Sony Optiarc, Inc.?</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Which ODDs did QSI design for</p>	<p style="text-align: right;">Page 229</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MR. WALTER: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. During the 2004 through 2009 time</p> <p>7 period, what role did QSI employees have in</p> <p>8 connection with determining ODD prices quoted</p> <p>9 to HP and Dell?</p> <p>10 MR. WALTER: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. In your experience, did prices</p> <p>15 for CD-ROM drives decline during the 2004</p> <p>16 through 2009 time period?</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. In your experience, did prices</p> <p>21 for DVD-ROM drives decline during the 2004</p> <p>22 through 2009 time period?</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 230</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Q. In your experience, did prices</p> <p>3 for DVD-RW drives decline during the 2004</p> <p>4 through 2009 time period?</p> <p>5 MR. WALTER: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. In your experience, did prices</p> <p>10 for combo drives decline during the 2004</p> <p>11 through 2009 time period?</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. In your experience, did prices</p> <p>16 for Blu-Ray drives decline during the 2004</p> <p>17 through 2009 time period?</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MR. REBLITZ-RICHARDSON: I have</p> <p>22 additional questions, but in light of</p> <p>23 the answers and responses today, I won't</p> <p>24 ask further questions at this time.</p> <p>25 Thank you for your time,</p>	<p style="text-align: right;">Page 232</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 MS. SCARLETT: This is Shana for</p> <p>3 the Indirect Purchaser plaintiffs, and</p> <p>4 I'm going to speak for the Direct as</p> <p>5 well. We don't need a rough. We'll</p> <p>6 just take our regular transcript</p> <p>7 whenever it's available.</p> <p>8 THE COURT REPORTER: Anyone else?</p> <p>9 MS. CHILDERS: This is Katie</p> <p>10 Childers for Dell. Same, please.</p> <p>11 THE COURT REPORTER: Anyone else?</p> <p>12 MR. WALTER: Same for Quanta.</p> <p>13 THE COURT REPORTER: Anyone else?</p> <p>14 THE VIDEOGRAPHER: The time now</p> <p>15 is 5:42 p.m. This concludes Tape 6 of</p> <p>16 6. We're going off the video record.</p> <p>17 (Time noted: 5:42 p.m.)</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 231</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 Mr. Chen.</p> <p>3 MR. NEUMEYER: Does anyone else</p> <p>4 have any further questions?</p> <p>5 THE VIDEOGRAPHER: Does anybody</p> <p>6 else on the line have more questions?</p> <p>7 MS. SCARLETT: No, I think we're</p> <p>8 safe to go off the record now.</p> <p>9 And thank you very much,</p> <p>10 Mr. Chen, for your time.</p> <p>11 THE COURT REPORTER: This is the</p> <p>12 court reporter. Can I ask everyone to</p> <p>13 state their orders on the record; if you</p> <p>14 would like a copy, when you would like</p> <p>15 it, if you would like a rough?</p> <p>16 (Continued on the next page.)</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 233</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 A C K N O W L E D G M E N T</p> <p>3</p> <p>4 STATE OF)</p> <p>5 : ss</p> <p>6 COUNTY OF)</p> <p>7</p> <p>8 I, Shang Hao Chen hereby certify</p> <p>9 that I have read the transcript of my</p> <p>10 testimony taken under oath in my</p> <p>11 deposition of November 18, 2013; that</p> <p>12 the transcript is a true, complete and</p> <p>13 correct record of my testimony, and that</p> <p>14 the answers on the record as given by me</p> <p>15 are true and correct.</p> <p>16</p> <p>17 _____</p> <p>18 Shang Hao Chen</p> <p>19</p> <p>20 Signed and subscribed to</p> <p>21 before me this _____</p> <p>22 day of _____, 2013.</p> <p>23 _____</p> <p>24 Notary Public</p> <p>25</p>

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2 C E R T I F I C A T E

3

4 STATE OF NEW YORK)

5 : ss.

6 COUNTY OF NASSAU)

7

8 I, PATRICIA A. BIDONDE, a Notary

9 Public within and for the State of New

10 York, do hereby certify:

11 That Shang Hao Chen, the witness

12 whose deposition is hereinbefore set

13 forth, was duly sworn by me and that

14 such deposition is a true record of the

15 testimony given by the witness.

16 I further certify that I am not

17 related to any of the parties to this

18 action by blood or marriage, and that I

19 am in no way interested in the outcome

20 of this matter.

21 IN WITNESS WHEREOF, I have

22 hereunto set my hand this day,

23 November 27, 2013.

24 Patricia Bidonde

25 PATRICIA A. BIDONDE, RPR

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<p style="text-align: right;">Page 234</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 C E R T I F I C A T E</p> <p>3</p> <p>4 STATE OF NEW YORK)</p> <p>5 : ss.</p> <p>6 COUNTY OF NASSAU)</p> <p>7</p> <p>8 I, PATRICIA A. BIDONDE, a Notary</p> <p>9 Public within and for the State of New</p> <p>10 York, do hereby certify:</p> <p>11 That Shang Hao Chen, the witness</p> <p>12 whose deposition is hereinbefore set</p> <p>13 forth, was duly sworn by me and that</p> <p>14 such deposition is a true record of the</p> <p>15 testimony given by the witness.</p> <p>16 I further certify that I am not</p> <p>17 related to any of the parties to this</p> <p>18 action by blood or marriage, and that I</p> <p>19 am in no way interested in the outcome</p> <p>20 of this matter.</p> <p>21 IN WITNESS WHEREOF, I have</p> <p>22 hereunto set my hand this day,</p> <p>23 November 27, 2013.</p> <p>24</p> <p>25 <u>PATRICIA A. BIDONDE, RPR</u></p>	<p style="text-align: right;">Page 236</p> <p>1 S. Chen - Confidential Restricted</p> <p>2 E X H I B I T S</p> <p>3 Plaintiffs' Page Line</p> <p>4 Exhibit 360-A English translation of</p> <p>5 Exhibit 360..... 36 20</p> <p>6 Exhibit 361 Document Bates-numbered</p> <p>7 Quanta_HAW_18063..... 39 7</p> <p>8 Exhibit 362 Document Bates-numbered</p> <p>9 Q230389..... 42 23</p> <p>10 Exhibit 363 Document Bates-numbered</p> <p>11 Q725951..... 50 18</p> <p>12 Exhibit 364 Document Bates-numbered</p> <p>13 Quanta_HAW_61411..... 53 3</p> <p>14 Exhibit 364-A English translation of</p> <p>15 Exhibit 364..... 53 7</p> <p>16 Exhibit 365 Document Bates-numbered</p> <p>17 Q9940..... 54 20</p> <p>18 Exhibit 365-A English translation of</p> <p>19 Exhibit 365..... 54 23</p> <p>20 Exhibit 366 Document Bates-numbered</p> <p>21 Q9969..... 55 21</p> <p>22 Exhibit 366-A English translation of</p> <p>23 Exhibit 366..... 55 23</p> <p>24 Exhibit 367 Document Bates-numbered</p> <p>25 Q9997..... 56 22</p>
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2	E X H I B I T S			2	E X H I B I T S		
3	Plaintiffs' Page Line			3	Plaintiffs' Page Line		
4	Exhibit 418 E-mail dated January 19,			4	Exhibit 425-A English translation of		
5	2009, from Sally Huang to			5	Exhibit 425..... 207 12		
6	Shang Hao Chen,			6	Exhibit 426 E-mail dated October 24,		
7	Bates-numbered			7	2008, from Hsu Hanes to		
8	Quanta_HAW_51033..... 190 18			8	Shang Hao Chen, plus		
9	Exhibit 418-A English translation of			9	attachments,		
10	Exhibit 418..... 190 24			10	Bates-numbered Q143765..... 210 21		
11	Exhibit 419 Document Bates-numbered			11	Exhibit 427 Document Bates-numbered		
12	Quanta_HAW_51284..... 192 8			12	Q13108..... 213 5		
13	Exhibit 420 E-mail dated October 5,			13	Exhibit 428 E-mail dated July 30,		
14	2007, from Shu-ming Tzeng			14	2008, from Cheryl Cheng		
15	to Sony NEC Optiarc			15	to Shang Hao Chen and		
16	employees and Shang Hao			16	others, Bates-numbered		
17	Chen, Bates-numbered			17	Quanta_HAW_19504..... 214 5		
18	Q252330..... 194 24			18	Exhibit 428-A English translation of		
19	Exhibit 421 E-mail dated December 13,			19	Exhibit 428..... 214 11		
20	2007, from Tomio Sato to			20	Exhibit 429 PowerPoint document dated		
21	Shang Hao Chen, and			21	February 11, 2009,		
22	attachment,			22	Bates-numbered		
23	Bates-numbered			23	Quanta_HAW_102629..... 216 3		
24	SOA_CIV_355854..... 197 2			24			
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1	S. Chen - Confidential Restricted			1	S. Chen - Confidential Restricted		
2	E X H I B I T S			2	E X H I B I T S		
3	Plaintiffs' Page Line			3	Plaintiffs' Page Line		
4	Exhibit 422 E-mail dated December 15,			4	Exhibit 430 E-mail dated December 10,		
5	2007, from Shang Hao Chen			5	2008, from Jessica Wang		
6	to Voka Chen,			6	to Shang Hao Chen,		
7	Bates-numbered			7	Bates-numbered Q733081..... 217 17		
8	Quanta_HAW_609..... 199 2			8	Exhibit 431 Document Bates-numbered		
9	Exhibit 423 E-mail dated April 3,			9	Quanta_HAW_49487..... 220 9		
10	2008, from Shu-ming Tzeng			10	Exhibit 431-A English translation of		
11	to Vincent Chng, Shang			11	Exhibit 431..... 220 13		
12	Hao Chen and others,			12	Exhibit 432 E-mail dated January 13,		
13	Bates-numbered Q254883..... 200 15			13	2009, from Shang Hao Chen		
14	Exhibit 424 E-mail dated May 15,			14	to Sally Huang and		
15	2008, from Shu-ming Tzeng			15	Shu-ming Tzeng,		
16	to Vincent Chng, Shang			16	Bates-numbered QSI-SUB		
17	Hao Chen and others,			17	1386856..... 224 6		
18	Bates-numbered			18	Exhibit 432-A English translation of		
19	Quanta_HAW_5842..... 204 7			19	Exhibit 432..... 224 12		
20	Exhibit 425 E-mail dated February 23,			20			
21	2009, from Sally Huang to			21			
22	Shang Hao Chen and			22			
23	others, Bates-numbered			23			
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1 S. Chen - Confidential Restricted
 2 ERRATA SHEET FOR THE TRANSCRIPT OF:
 3 Case Name: IN RE OPTICAL DISK DRIVE PRODUCTS
 4 Dep Date: November 18, 2013
 5 Deponent: Shang Hao Chen
 6 Pg. Ln. Now Reads Should Read Reason
 7 _____
 8 _____
 9 _____
 10 _____
 11 _____
 12 _____
 13 _____
 14 _____
 15 _____
 16 _____
 17 _____
 18 _____
 19
 20 _____
 21 Signature of Deponent
 22 Signed and subscribed to before me
 23 this ____ day of _____, 2013
 24 _____
 25 Notary Public

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EXHIBIT 2

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Page 1

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE OPTICAL DISK DRIVE)

PRODUCTS ANTITRUST)

LITIGATION)

-----) No. 3:10-md-2143

) RS

This document relates to:)

ALL INDIRECT PURCHASER)

ACTIONS)

_____)

CONFIDENTIAL RESTRICTED
VIDEOTAPED DEPOSITION OF SHU-MING TZENG
Taipei, Taiwan
Wednesday, November 20, 2013

Reported by:

PATRICIA A. BIDONDE, RPR

JOB #: 114045

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<p style="text-align: right;">Page 2</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6 November 20, 2013</p> <p>7 8:37 a.m.</p> <p>8</p> <p>9</p> <p>10 Confidential Restricted</p> <p>11 Videotaped Deposition of Shu-ming Tzeng,</p> <p>12 held at the Grand Hyatt Hotel, Taipei,</p> <p>13 Taiwan, before Patricia A. Bidonde, a</p> <p>14 Registered Professional Reporter and</p> <p>15 Notary Public of the State of New York.</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 4</p> <p>1</p> <p>2 A P P E A R A N C E S: (Cont'd)</p> <p>3</p> <p>4 ALSTON & BIRD, LLP</p> <p>5 Attorneys for Dell, Inc. and Dell Products,</p> <p>6 L.P.</p> <p>7 One Atlantic Center</p> <p>8 1201 West Peachtree Street</p> <p>9 Atlanta, Georgia 30309-3242</p> <p>10 BY: KATIE CHILDERS, ESQ.</p> <p>11 (via telephone)</p> <p>12 (404) 881-7000</p> <p>13</p> <p>14 VINSON & ELKINS, LLP</p> <p>15 Attorneys for Hitachi, LTD.</p> <p>16 2200 Pennsylvania Avenue NW</p> <p>17 Suite 500 West</p> <p>18 Washington, D.C. 20037-1701</p> <p>19 BY: DENNIS S. SCHMELZER, ESQ.</p> <p>20 (via telephone)</p> <p>21 (202) 639-6553</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 3</p> <p>1</p> <p>2 A P P E A R A N C E S:</p> <p>3</p> <p>4 HAGENS, BERMAN, SOBOL, SHAPIRO LLP</p> <p>5 Attorneys for Indirect Purchaser Plaintiffs</p> <p>6 715 Hearst Avenue</p> <p>7 Suite 202</p> <p>8 Berkeley, California 94710</p> <p>9 BY: SHANA E. SCARLETT, ESQ.</p> <p>10 (via telephone)</p> <p>11 (510) 725-3000</p> <p>12</p> <p>13 BOIES, SCHILLER & FLEXNER, LLP</p> <p>14 Attorneys for Sony Corporation, Sony Optiarc</p> <p>15 America, Inc. and Sony Optiarc, Inc.</p> <p>16 1999 Harrison Street</p> <p>17 Suite 900</p> <p>18 Oakland, California 94612</p> <p>19 BY: BEKO O. REBLITZ-RICHARDSON, ESQ.</p> <p>20 (via telephone)</p> <p>21 (510) 874-1000</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 5</p> <p>1</p> <p>2 A P P E A R A N C E S: (Cont'd)</p> <p>3</p> <p>4 LATHAM & WATKINS, LLP</p> <p>5 Attorneys for Toshiba Corporation, Toshiba</p> <p>6 Samsung Storage Technologies Corporation,</p> <p>7 Toshiba Samsung Storage Technologies</p> <p>8 Corporation Korea, and TAIS</p> <p>9 505 Montgomery Street</p> <p>10 Suite 1900</p> <p>11 San Francisco, California 94111</p> <p>12 BY: STEPHANIE SONG, ESQ.</p> <p>13 (via telephone)</p> <p>14 (415) 395-8240</p> <p>15</p> <p>16 NOVAK DRUCE CONNOLLY BOVE & QUIGG LLP</p> <p>17 Attorneys for the Quanta entities</p> <p>18 1007 North Orange Street</p> <p>19 Ninth Floor</p> <p>20 Wilmington, Delaware 19801</p> <p>21 BY: CURT M. LAMBERT, ESQ.</p> <p>22 (via telephone)</p> <p>23 (302) 658-9141</p> <p>24</p> <p>25</p>

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<p style="text-align: right;">Page 6</p> <p>1</p> <p>2 A P P E A R A N C E S: (Cont'd)</p> <p>3</p> <p>4 ASIA LAW FOREIGN LEGAL AFFAIRS LAW FIRM</p> <p>5 Attorneys for Witness</p> <p>6 17F, Suite B, No. 167</p> <p>7 Dunhua North Road</p> <p>8 Taipei 10549, Taiwan</p> <p>9 BY: CHRISTOPHER M. NEUMEYER, ESQ.</p> <p>10 886-2 2717-1999</p> <p>11</p> <p>12 ALSO PRESENT:</p> <p>13 JOSEPH TSENG, Chinese Interpreter</p> <p>14 CHRISTIAN BIDONDE, Videographer</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 8</p> <p>1</p> <p>2 P R O C E E D I N G S</p> <p>3 THE VIDEOGRAPHER: This is the</p> <p>4 videotaped deposition of Shu-ming Tzeng</p> <p>5 in the matter of In Re: Optical Disk</p> <p>6 Drive Products Antitrust Litigation,</p> <p>7 this document relates to all actions;</p> <p>8 filed in the United States District</p> <p>9 Court, Northern District of California,</p> <p>10 San Francisco Division; Case Number</p> <p>11 3:10-md-2143 RS.</p> <p>12 This deposition is being held at</p> <p>13 the Grand Hyatt Taipei, Taiwan on</p> <p>14 November 20, 2013.</p> <p>15 My name is Chris Bidonde from US</p> <p>16 Legal Support. And I am the video</p> <p>17 specialist. The court reporter today is</p> <p>18 Patricia Bidonde also from US Legal</p> <p>19 Support.</p> <p>20 We are going on the record at</p> <p>21 approximately 8:37 a.m. Taipei time.</p> <p>22 Counsel will now state their</p> <p>23 appearances for the record.</p> <p>24 MS. SCARLETT: This is Shana</p> <p>25 Scarlett from Hagens, Berman, Sobol, and</p>
<p style="text-align: right;">Page 7</p> <p>1</p> <p>2 IT IS HEREBY STIPULATED AND</p> <p>3 AGREED, by and between the attorneys for</p> <p>4 the respective parties herein, that</p> <p>5 filing and sealing be and the same are</p> <p>6 hereby waived.</p> <p>7 IT IS FURTHER STIPULATED AND</p> <p>8 AGREED that all objections, except as to</p> <p>9 the form of the question, shall be</p> <p>10 reserved to the time of the trial.</p> <p>11 IT IS FURTHER STIPULATED AND</p> <p>12 AGREED that the within deposition may be</p> <p>13 sworn to and signed before any officer</p> <p>14 authorized to administer an oath, with</p> <p>15 the same force and effect as if signed</p> <p>16 and sworn to before the Court.</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 9</p> <p>1</p> <p>2 Shapiro for the indirect purchaser</p> <p>3 plaintiffs.</p> <p>4 MS. CHILDERS: This is Katie</p> <p>5 Childers for plaintiffs Dell, Inc. and</p> <p>6 Dell Products LP.</p> <p>7 MR. LAMBERT: Curt Lambert of</p> <p>8 Novak Druce Connolly Bove and Quigg for</p> <p>9 Quanta defendants.</p> <p>10 THE VIDEOGRAPHER: Anybody else?</p> <p>11 MR. REBLITZ-RICHARDSON: Beko</p> <p>12 Reblitz-Richardson of Boies, Schiller</p> <p>13 and Flexner on behalf of the Sony</p> <p>14 defendants.</p> <p>15 MS. SONG: This is Stephanie Song</p> <p>16 from Latham and Watkins on behalf of</p> <p>17 TSSTK, TSST, Toshiba Corporation, and</p> <p>18 TAIS.</p> <p>19 MR. NEUMEYER: And Chris Neumeyer</p> <p>20 of Asia Law for the witness.</p> <p>21 THE COURT REPORTER: Is that</p> <p>22 everyone?</p> <p>23 MS. SCARLETT: I think so.</p> <p>24 Chris, can you make sure your</p> <p>25 microphone -- I could barely hear you</p>

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<p style="text-align: right;">Page 10</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 when you were speaking.</p> <p>3 MR. NEUMEYER: Okay. Is that</p> <p>4 better?</p> <p>5 MS. SCARLETT: Yes, that's</p> <p>6 better.</p> <p>7 THE COURT REPORTER: I didn't get</p> <p>8 an appearance for the attorney from</p> <p>9 Vinson Elkins.</p> <p>10 MR. SCHMELZER: This is Dennis</p> <p>11 Schmelzer from Vinson and Elkins on</p> <p>12 behalf of the Hitachi Limited.</p> <p>13 THE COURT REPORTER: Thank you.</p> <p>14 THE VIDEOGRAPHER: Will the court</p> <p>15 reporter please swear in the translator</p> <p>16 and the witness.</p> <p>17 J O S E P H T S E N G, was duly sworn by a</p> <p>18 Notary Public to interpret the</p> <p>19 questions from English into Mandarin,</p> <p>20 and the answers from Mandarin into</p> <p>21 English.</p> <p>22 S H U - M I N G T Z E N G, called as a witness,</p> <p>23 having been duly sworn by a Notary</p> <p>24 Public, was examined and testified</p> <p>25 through the official interpreter as</p>	<p style="text-align: right;">Page 12</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 adjust your telephone.</p> <p>3 MR. LAMBERT: Maybe I should</p> <p>4 repeat it.</p> <p>5 This is Curt Lambert for Quanta</p> <p>6 defendants. Before the examination</p> <p>7 begins, we'd like the record to reflect</p> <p>8 the following positions: To the extent</p> <p>9 that the witness invokes Fifth Amendment</p> <p>10 rights, our position is that each</p> <p>11 invocation is a separate assertion of</p> <p>12 Fifth Amendment rights.</p> <p>13 To the extent the plaintiffs</p> <p>14 would seek to establish an adverse</p> <p>15 inference, plaintiffs would need to meet</p> <p>16 the applicable requirements with respect</p> <p>17 to each question and each invocation on</p> <p>18 an individual invocation basis.</p> <p>19 Form objections include</p> <p>20 objections to translations. We have a</p> <p>21 standing objection to use of any PLDS or</p> <p>22 HLDS documents or language from those</p> <p>23 documents as a basis to seek to sustain</p> <p>24 an adverse inference.</p> <p>25 Was that statement clear?</p>
<p style="text-align: right;">Page 11</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 follows:</p> <p>3 MR. LAMBERT: This is Curt</p> <p>4 Lambert for Quanta. Before the</p> <p>5 examination begins, we'd like to make,</p> <p>6 for the record reflect the following</p> <p>7 positions: To the extent the witness</p> <p>8 invokes Fifth Amendment rights, our</p> <p>9 position is that each invocation is a</p> <p>10 separate assertion of Fifth Amendment</p> <p>11 rights.</p> <p>12 To the extent that plaintiffs</p> <p>13 would seek to establish an adverse</p> <p>14 inference, plaintiffs would need to meet</p> <p>15 the applicable requirements with respect</p> <p>16 to each question and each invocation on</p> <p>17 an individual invocation basis.</p> <p>18 In addition, form objections</p> <p>19 include objections to translations. We</p> <p>20 also have a standing objection to use of</p> <p>21 any PLDS or HLDS documents or language</p> <p>22 from those documents as a basis to seek</p> <p>23 to sustain an adverse inference.</p> <p>24 THE COURT REPORTER: We were</p> <p>25 barely able to hear you. Could you</p>	<p style="text-align: right;">Page 13</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 THE COURT REPORTER: Yes, thank</p> <p>3 you.</p> <p>4 MR. LAMBERT: Thank you.</p> <p>5 MS. SCARLETT: This is Shana</p> <p>6 Scarlett for the indirect purchaser</p> <p>7 plaintiffs. I just want to make clear</p> <p>8 on the record and for the court</p> <p>9 reporter's sake that an objection by one</p> <p>10 defendant has been stipulated to be an</p> <p>11 objection by all defendants. And the</p> <p>12 court reporter need not capture every</p> <p>13 defendant who make the objection.</p> <p>14 EXAMINATION BY</p> <p>15 MS. SCARLETT:</p> <p>16 Q. Could the witness please state</p> <p>17 her name.</p> <p>18 A. Shu-ming Tzeng.</p> <p>19 Q. Good morning, Ms. Tzeng. Do you</p> <p>20 go by any other name?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Could you please state your home</p>

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<p style="text-align: right;">Page 14</p> <p>1 S. Tzeng - Confidential Restricted 2 address? 3 MR. LAMBERT: Objection; form. 4 A. On advice of my counsel, I invoke 5 for Fifth Amendment rights under the US 6 Constitution and decline to answer. 7 Q. Could you please state your 8 business address? 9 MR. LAMBERT: Objection; form. 10 A. On advice of my counsel, I invoke 11 my Fifth Amendment rights under the US 12 Constitution and decline to answer. 13 Q. Are you employed by Quanta 14 Storage, Inc.? 15 MR. LAMBERT: Objection; form. 16 A. On advice of my counsel, I invoke 17 my Fifth Amendment rights under the US 18 Constitution and decline to answer. 19 Q. Have you been employed by Quanta 20 Storage, Inc. from at least 2007 to the 21 present? 22 MR. LAMBERT: Objection; form. 23 A. On advice of my counsel, I invoke 24 my Fifth Amendment rights under the US 25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 16</p> <p>1 S. Tzeng - Confidential Restricted 2 MR. LAMBERT: Objection; form. 3 A. On advice of my counsel, I invoke 4 my Fifth Amendment rights under the US 5 Constitution and decline to answer. 6 Q. Quanta Storage, Inc. is also 7 known as Quanta. Correct? 8 MR. LAMBERT: Objection; form. 9 A. On advice of my counsel, I invoke 10 my Fifth Amendment rights under the US 11 Constitution and decline to answer. 12 Q. Do you understand that this 13 lawsuit is being brought by purchasers of 14 optical disk drives and products containing 15 optical disk drives? 16 MR. LAMBERT: Objection; form. 17 A. On advice of my counsel, I invoke 18 my Fifth Amendment rights under the US 19 Constitution and decline to answer. 20 Q. Do you understand that plaintiffs 21 contend that the defendants including QSI 22 illegally conspired to stabilize the price of 23 optical disk drives from approximately 2004 24 through 2009? 25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 15</p> <p>1 S. Tzeng - Confidential Restricted 2 Q. Do you understand that you 3 remember testifying under oath here today just 4 as if you were testifying in a court of law? 5 MR. LAMBERT: Objection; form. 6 A. On advice of my counsel, I invoke 7 my Fifth Amendment rights under the US 8 Constitution and decline to answer. 9 Q. Do you understand that being 10 under oath means you're obligated by law to 11 tell the truth? 12 MR. LAMBERT: Objection; form. 13 A. On advice of my counsel, I invoke 14 my Fifth Amendment rights under the US 15 Constitution and decline to answer. 16 Q. Do you understand that you are 17 here today regarding an antitrust class action 18 lawsuit in which Quanta Storage, Inc. is one 19 of the defendants? 20 MR. LAMBERT: Objection; form. 21 A. On advice of my counsel, I invoke 22 my Fifth Amendment rights under the US 23 Constitution and decline to answer. 24 Q. Quanta Storage, Inc. is also 25 known as QSI. Correct?</p>	<p style="text-align: right;">Page 17</p> <p>1 S. Tzeng - Confidential Restricted 2 A. On advice of my counsel, I invoke 3 my Fifth Amendment rights under the US 4 Constitution and decline to answer. 5 Q. Do you speak English? 6 MR. LAMBERT: Objection; form. 7 A. On advice of my counsel, I invoke 8 my Fifth Amendment rights under the US 9 Constitution and decline to answer. 10 Q. Do you understand spoken English? 11 MR. LAMBERT: Objection; form. 12 A. On advice of my counsel, I invoke 13 my Fifth Amendment rights under the US 14 Constitution and decline to answer. 15 Q. Do you read English? 16 MR. LAMBERT: Objection; form. 17 A. On advice of my counsel, I invoke 18 my Fifth Amendment rights under the US 19 Constitution and decline to answer. 20 Q. Do you write in English? 21 MR. LAMBERT: Objection; form. 22 A. On advice of my counsel, I invoke 23 my Fifth Amendment rights under the US 24 Constitution and decline to answer. 25 Q. Have you ever spoken to QSI's</p>

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<p style="text-align: right;">Page 18</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 customers in English?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Have you ever written to QSI's</p> <p>8 customers in English?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Are you on any medications that</p> <p>14 would impair your ability to testify today to</p> <p>15 the best of your ability?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Is there any reason why you can't</p> <p>21 give truthful testimony today?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 20</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Q. Do you understand that your</p> <p>3 testimony today may be used against QSI and</p> <p>4 other defendants in this lawsuit?</p> <p>5 MR. LAMBERT: Objection; form</p> <p>6 had.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Do you understand that when you</p> <p>11 refuse to answer a question because of your</p> <p>12 constitutional protections, it's possible that</p> <p>13 the judge and jury may use that choice against</p> <p>14 QSI and presume that testimony you might have</p> <p>15 given here would have been bad for QSI?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. You are being represented here</p> <p>21 today by Mr. Neumeyer. Correct?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 19</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Q. Do you understand that your</p> <p>3 testimony today potentially could be read or</p> <p>4 shown to the judge or jury in this case?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. You are making a choice here</p> <p>10 today to assert your Fifth Amendment</p> <p>11 protections. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Do you understand that the Fifth</p> <p>17 Amendment to the United States Constitution</p> <p>18 allows a witness to refuse to provide</p> <p>19 testimony that may provide evidence that could</p> <p>20 be used in criminal proceedings against the</p> <p>21 witness?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 21</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Q. And have you had the opportunity</p> <p>3 to speak to Mr. Neumeyer about the potential</p> <p>4 effects of asserting the Fifth Amendment in</p> <p>5 your deposition?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. If you continue to assert the</p> <p>11 Fifth Amendment today, is it fair for the</p> <p>12 judge and jury to presume that you've had</p> <p>13 every opportunity to consider your choice?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: Could the court</p> <p>19 reporter please provide the witness with</p> <p>20 Exhibit 359, which has been previously</p> <p>21 marked and Bates-numbered Q86434.</p> <p>22 A. (Document review.)</p> <p>23 Q. Is this an organizational chart</p> <p>24 reflecting the QSI employee structure as of</p> <p>25 November 2007?</p>

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<p style="text-align: right;">Page 22</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Could the witness please turn to</p> <p>7 the second page of the document. In November</p> <p>8 2007 you were an account manager for the Dell</p> <p>9 account. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. In November 2007 you were an</p> <p>15 account manager for the Wistron account.</p> <p>16 Correct?</p> <p>17 THE COURT REPORTER: For the what</p> <p>18 account?</p> <p>19 MS. SCARLETT: Wistron.</p> <p>20 W-i-s-t-r-o-n.</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. In November 2007 you were an</p>	<p style="text-align: right;">Page 24</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 MS. SCARLETT: Could the court</p> <p>6 reporter please provide the witness with</p> <p>7 what's been previously marked as Exhibit</p> <p>8 407, a document Bates number</p> <p>9 QUANTA_HAW_8529.</p> <p>10 A. (Document review.)</p> <p>11 Q. This is a list of Quanta Storage,</p> <p>12 Inc.'s account codes?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. "WIN" is Quanta's abbreviation</p> <p>18 for Dell. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. "WIS" is Quanta's abbreviation</p> <p>24 for Wistron. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 23</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 account manager for the Arima, A-r-i-m-a,</p> <p>3 account. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. In November 2007 you were an</p> <p>9 account manager for the Asus account.</p> <p>10 Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer?</p> <p>15 Q. In November 2007 you were an</p> <p>16 account manager for the Zenitron,</p> <p>17 Z-e-n-i-t-r-o-n, account. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. In November 2007 you were an</p> <p>23 account manager for the Inventec,</p> <p>24 I-n-v-e-n-t-e-c, account. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 25</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. "AMI" is Quanta's abbreviation</p> <p>6 for Arima. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. "SUS" is Quanta's abbreviation</p> <p>12 for Asus. Correct?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. "ZEN" is Quanta's abbreviation</p> <p>18 for Zenitron. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. "EVA" is Quanta's abbreviation</p> <p>24 for Inventec. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 26</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. In November 2007 you reported to</p> <p>6 Haw Chen. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And Haw Chen is also known as</p> <p>12 Shang Hao Chen?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And in November 2007 Haw Chen was</p> <p>18 the general manager and vice president of the</p> <p>19 optical storage business unit of Quanta</p> <p>20 Storage. Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. In November 2007 Haw Chen</p>	<p style="text-align: right;">Page 28</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Q. You were also the account manager</p> <p>3 for the Optiarc account. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And in October 2008 you reported</p> <p>9 to Haw Chen. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Isn't it true that between 2007</p> <p>15 and 2009 you cooperated with your competitors?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. You cooperated with your</p> <p>21 competitors by providing information about how</p> <p>22 QSI operated that was not public information.</p> <p>23 Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 27</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 reported to Shi-chi Ho, the president of</p> <p>3 Quanta Storage. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 MS. SCARLETT: Could the court</p> <p>9 reporter please provide the witness with</p> <p>10 the document previously marked adds</p> <p>11 Exhibit 397 and 397-A document</p> <p>12 Bates-numbered QUANTA_HAW_35336 plus its</p> <p>13 attachment.</p> <p>14 A. (Document review.)</p> <p>15 Q. Could the witness please turn to</p> <p>16 page 8 of this document entitled, "QSI sales</p> <p>17 organization."</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 Q. In October 2008 you were the</p> <p>20 account leader for the Dell, the Taiwanese</p> <p>21 ODM, Intel, and Buffalo accounts. Correct?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 29</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. You provided your competitors</p> <p>5 nonpublic information about QSI's prices,</p> <p>6 sales volume, past and future demands, costs,</p> <p>7 quality and capacity. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And the reason you provided this</p> <p>13 information to your competitors was to help</p> <p>14 them, wasn't it?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Isn't it true that the reason you</p> <p>20 discussed pricing information with your</p> <p>21 competitors was to achieve the goal of selling</p> <p>22 optical disk drives to your customers at</p> <p>23 higher prices than if you didn't provide each</p> <p>24 other with this information?</p> <p>25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 30</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Isn't it true that you told your</p> <p>6 competitors before sales events what rank QSI</p> <p>7 wanted to achieve?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And isn't it true that your</p> <p>13 competitors would also tell you what rank they</p> <p>14 wanted to achieve?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Isn't it true that before sales</p> <p>20 events, you told your competitors what prices</p> <p>21 you anticipated quoting?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 32</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 drives were being quoted to your customers?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Isn't it true that sometimes</p> <p>8 optical disk drives sales volumes for company</p> <p>9 were limited by capacity or quality issues?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. If a competitor told you they had</p> <p>15 limited ability to compete for volume, you</p> <p>16 understood that this would have an impact on</p> <p>17 price the competitor would bid. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. So QSI and its competitors would</p> <p>23 tell each other their capacity situation to</p> <p>24 help limit price competition.</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 31</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Q. Isn't it true that before sales</p> <p>3 events your competitors told you what prices</p> <p>4 they anticipated quoting?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Isn't it true that during sales</p> <p>10 events that were ongoing, you told your</p> <p>11 competitors what prices QSI had just quoted?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Isn't it true that during sales</p> <p>17 events that were ongoing your competitors told</p> <p>18 you what prices they had just quoted?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. Isn't it true that the reason you</p> <p>24 had these discussions with your competitors</p> <p>25 was to limit how low prices for optical disk</p>	<p style="text-align: right;">Page 33</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And when you and your competitors</p> <p>6 discussed cost information, the purpose of</p> <p>7 doing so was to help each other achieve the</p> <p>8 goal of higher optical disk drive prices.</p> <p>9 Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. So, for example, if your</p> <p>15 competitors told you their costs were higher</p> <p>16 than yours, you understood that your</p> <p>17 competitors had less profit margin than QSI</p> <p>18 did.</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And this meant that each of you</p> <p>24 would know who was in a better financial</p> <p>25 position to offer a lower price. Correct?</p>

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<p style="text-align: right;">Page 34</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. During Quanta Storage's</p> <p>7 relationship with Sony NEC Optiarc, Optiarc</p> <p>8 employees often employed you with information</p> <p>9 from competitors. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And you often provided Sony NEC</p> <p>15 Optiarc employees with information regarding</p> <p>16 competitors. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And this continued after Sony</p> <p>22 Optiarc became Sony NEC Optiarc. Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 36</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And you informed the recipients</p> <p>7 that you had spoken with PLDS sales regarding</p> <p>8 a Dell internet negotiation for DVD-RW and</p> <p>9 combo drives. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Looking at the first page of the</p> <p>15 document you state that, "By the way, I had a</p> <p>16 conversation with PLDS sales yesterday."</p> <p>17 Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And PLDS disclosed to you the</p> <p>23 current sales volume for 12.7 tray SATA</p> <p>24 interface drives sold to Dell. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 35</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Sony Optiarc employees provided</p> <p>4 you with information from competitors and you</p> <p>5 provided Sony Optiarc with information from</p> <p>6 competitors. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 MS. SCARLETT: Could the court</p> <p>12 reporter please provide the witness with</p> <p>13 the exhibit previously marked as 373, a</p> <p>14 document Bates-numbered 2254640.</p> <p>15 A. (Document review.)</p> <p>16 Q. This is an e-mail you sent on</p> <p>17 March 13, 2008, to Vincent Chng and Amino</p> <p>18 Masafumi of Sony NEC Optiarc among others.</p> <p>19 Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. You also sent this e-mail to your</p> <p>25 boss, Haw Chen. Correct?</p>	<p style="text-align: right;">Page 37</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Specifically PLDS told you that</p> <p>6 and I'm quoting, "The TAM for 12.7 tray SATA</p> <p>7 is just 20 to 30K per M as of today and we</p> <p>8 don't think that the project Fleming (the</p> <p>9 re-flashed model for desktop) will have 100K</p> <p>10 per M."</p> <p>11 Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And you requested that Vincent</p> <p>17 Chng of Sony NEC Optiarc help to gather more</p> <p>18 information from other competitors for this</p> <p>19 Dell event. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. It was openly acknowledged</p> <p>25 between you and Sony NEC Optiarc employees</p>

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<p style="text-align: right;">Page 38</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 that you spoke with competitors. Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. In February 2009 Vincent Chng</p> <p>8 informed you that he had spoken with, "H</p> <p>9 company concerning a Dell event for DVD-RW</p> <p>10 drives."</p> <p>11 Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 the document previously marked as</p> <p>19 Exhibit 382, which has the Bates number</p> <p>20 Q261745.</p> <p>21 A. (Document review.)</p> <p>22 Q. This is an e-mail that you sent</p> <p>23 to Haw Chen and Vincent Chng of Sony Optiarc</p> <p>24 among others on February 10, 2009. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 40</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And knowing how aggressive your</p> <p>8 competitors were going to be was an important</p> <p>9 consideration for Quanta Storage in setting</p> <p>10 the price of optical disk drives that it sold</p> <p>11 to Dell. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And this is why you thanked</p> <p>17 Mr. Chng for this information. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And this was why you stated that</p> <p>23 you would study the costs again and get back</p> <p>24 to you. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 39</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And the second e-mail optical</p> <p>6 page is an e-mail that you received from</p> <p>7 Vincent Chng of Sony Optiarc. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. In this second e-mail Mr. Chng</p> <p>13 stated to you, "FYI, H company has informed me</p> <p>14 that their management has given him a very</p> <p>15 aggressive target and is targeting a minimum</p> <p>16 of 30 percent share (number 2 position).</p> <p>17 Based on this, I believe that the bid from</p> <p>18 other supplier will be quite aggressive."</p> <p>19 Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. By "H" company, you understood</p> <p>25 that Mr. Chng meant your competitor HLDS.</p>	<p style="text-align: right;">Page 41</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 MS. SCARLETT: Could the court</p> <p>6 reporter please provide the witness with</p> <p>7 the document that has previously been</p> <p>8 marked as Exhibit 424 Bates number</p> <p>9 QUANTA_HAW_5842.</p> <p>10 A. (Document review.)</p> <p>11 Q. This is an e-mail dated May 15,</p> <p>12 2008, from you. Correct?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And you sent this e-mail to</p> <p>18 Vincent Chng of Sony NEC Optiarc and your boss</p> <p>19 Haw Chen, among others. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Please turn to page 4 of this</p> <p>25 document.</p>

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<p style="text-align: right;">Page 42</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 In May 2008, Dell asked Sony</p> <p>3 Optiarc to remove the 1 percent warrant cost</p> <p>4 from their drives. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And Sony Optiarc forwarded this</p> <p>10 request on to you. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Turning to the first page of this</p> <p>16 document, please.</p> <p>17 On May 15, 2008, you informed Haw</p> <p>18 Chen and Sony Optiarc employees that you had</p> <p>19 spoken with P company. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Specifically you said you talked</p> <p>25 to P company. "They don't want to move</p>	<p style="text-align: right;">Page 44</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And during these</p> <p>6 instant-messaging conversations, you exchanged</p> <p>7 information with Mr. Chng that you had gained</p> <p>8 from competitors. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. You then would copy these</p> <p>14 instant-messaging conversations and provide</p> <p>15 them to your boss, Haw Chen, in e-mail.</p> <p>16 Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Could the court</p> <p>22 reporter please provide the witness with</p> <p>23 the document previously marked as</p> <p>24 Exhibit 383 and 383-A, which is a</p> <p>25 document Bates-numbered Q123066.</p>
<p style="text-align: right;">Page 43</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 anymore either."</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And by "P company" you meant</p> <p>9 PLDS, didn't you?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And given this information, you</p> <p>15 recommended that Quanta and Sony should make</p> <p>16 no price concessions except offering a 5 cents</p> <p>17 removal for tray SATA drives. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Vincent Chng of Sony Optiarc</p> <p>23 often corresponded with you by instant</p> <p>24 messaging. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 45</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. (Document review.)</p> <p>3 Q. This is an e-mail that you sent</p> <p>4 to Haw Chen dated June 23, 2008. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And in this e-mail you copy an</p> <p>10 instant-messaging conversation that you had</p> <p>11 with Vincent Chng of Sony NEC Optiarc where</p> <p>12 you discuss pricing of certain drives to Dell.</p> <p>13 Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. At the top of the e-mail you</p> <p>19 specifically refer to Vincent. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Turning to the third page of the</p> <p>25 document, there's an e-mail there from Vincent</p>

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<p style="text-align: right;">Page 46</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Chng to you. Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. The VC in the instant-messaging</p> <p>8 conversation found on pages 1 and 2 of this</p> <p>9 e-mail is, in fact, Vincent Chng of Sony NEC</p> <p>10 Optiarc, isn't it?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. You and Mr. Chng agree in this</p> <p>16 conversation that because there was, "No</p> <p>17 competition" with Panasonic and TEAC, that</p> <p>18 Optiarc and QSI did not need to lower the</p> <p>19 price to Dell. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Specifically Vincent Chng stated</p> <p>25 to you, "There's no reason for us to lower</p>	<p style="text-align: right;">Page 48</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 is 9:37 a.m. This concludes Tape 1.</p> <p>3 We're going off the video record.</p> <p>4 (Recess taken from 9:37 a.m. to</p> <p>5 9:50 a.m.)</p> <p>6 THE VIDEOGRAPHER: The time now</p> <p>7 is 9:50 a.m. This begins Tape Number 2.</p> <p>8 We're back on the record with Shu-ming</p> <p>9 Tzeng.</p> <p>10 BY MS. SCARLETT:</p> <p>11 Q. Could the witness please look at</p> <p>12 Exhibit 384, which I believe is now in front</p> <p>13 of you.</p> <p>14 This is an e-mail that you sent</p> <p>15 to your boss Haw Chen on July 3, 2008.</p> <p>16 Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And in this e-mail you copy the</p> <p>22 contents of an instant-messaging conversation</p> <p>23 with VC. Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 47</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 price when competition is not moving."</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. In July 2008 you had another</p> <p>9 instant-messaging conversation with Vincent</p> <p>10 Chng. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 MS. SCARLETT: Could the court</p> <p>16 reporter please provide the witness with</p> <p>17 previously marked Exhibit 384 and 384-A</p> <p>18 document Bates-numbered</p> <p>19 QUANTA_HAW_14855.</p> <p>20 THE WITNESS: Could we take a</p> <p>21 break.</p> <p>22 MS. SCARLETT: Absolutely. Why</p> <p>23 don't we go ahead and take a ten-minute</p> <p>24 break.</p> <p>25 THE VIDEOGRAPHER: The time now</p>	<p style="text-align: right;">Page 49</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And VC is Vincent Chng of Sony</p> <p>5 NEC Optiarc. Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And in this conversation Mr. Chng</p> <p>11 informed you that he had met with a TEAC</p> <p>12 account manager the day before. Correct.</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And Mr. Chng informed you that</p> <p>18 TEAC had told him their price for slot PATA</p> <p>19 DVD-RW Q2 is \$38.26. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Turning to the second page of the</p> <p>25 document, please. Mr. Chng also informed you</p>

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<p style="text-align: right;">Page 50</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 that TEAC had disclosed their tray PATA combo</p> <p>3 is \$20.98. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Mr. Chng also informed you the</p> <p>9 TEAC account manager informed him their native</p> <p>10 DVD-ROM is \$20. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. In July 2008 you sent another</p> <p>16 e-mail to Haw Chen containing an</p> <p>17 instant-messaging conversation between</p> <p>18 yourself and Vincent Chng of Sony NEC Optiarc.</p> <p>19 Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 MS. SCARLETT: Could the court</p> <p>25 reporter please provide the witness with</p>	<p style="text-align: right;">Page 52</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And this conversation related to</p> <p>7 a request from Dell for rebates on certain</p> <p>8 DVD-read write drives. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And Dell was requesting a rebate</p> <p>14 from Sony NEC Optiarc for these drives which</p> <p>15 Optiarc was reluctant to provide. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Turning to the page</p> <p>21 Bates-numbered Q256593. Alex Wu of Dell</p> <p>22 stated to Vincent Chng that, "As an account</p> <p>23 manager we expect you to stand firm and fight</p> <p>24 for Dell interests. This is the value we</p> <p>25 see."</p>
<p style="text-align: right;">Page 51</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Exhibit 385 and 385-A a document</p> <p>3 Bates-numbered Q256590.</p> <p>4 Q. This is an e-mail that you sent</p> <p>5 to Haw Chen on July 10, 2008. Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And, again, you had copied the</p> <p>11 contents of an instant-messaging conversation</p> <p>12 between you and Vincent Chng of Sony NEC</p> <p>13 Optiarc. Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And in this conversation you are</p> <p>19 "Shu-ming sleepy, sleepy head"?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And the VC in this conversation</p> <p>25 is Vincent Chng of Sony NEC Optiarc. Correct?</p>	<p style="text-align: right;">Page 53</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And this e-mail from Alex Wu was</p> <p>8 forwarded to you by Mr. Chng. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Turning to the second page of</p> <p>14 this document, which is Bates-numbered</p> <p>15 Q256591.</p> <p>16 In your instant-messaging</p> <p>17 conversation with Mr. Chng he stated that, "As</p> <p>18 an account manager, my duty is to fight for my</p> <p>19 own company's interests."</p> <p>20 Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And you agreed stating, "Who</p>

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<p style="text-align: right;">Page 54</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 needs to care about how much cost saving you</p> <p>3 do for Dell."</p> <p>4 Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. In October 2008 you had another</p> <p>10 instant-messaging conversation with Mr. Chng.</p> <p>11 Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 the Exhibit previously marked as Exhibit</p> <p>19 386 and 386-A, document Bates number</p> <p>20 QUANTA_HAW_37186.</p> <p>21 A. (Document review.)</p> <p>22 Q. This was an e-mail that you sent</p> <p>23 to Haw Chen on October 24, 2008. Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 56</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 check price of other supplier."</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And this related to a Dell</p> <p>9 procurement event. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And you told Mr. Chng that you</p> <p>15 had lunch with the PLDS team. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And the PLDS team told you that</p> <p>21 they had "no intention to lower than RFQ</p> <p>22 price."</p> <p>23 Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 55</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And this e-mail again copies the</p> <p>5 contents of an instant-messaging conversation</p> <p>6 between you and a VC. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And the first line of this</p> <p>12 conversation you say, "Hello Vincent."</p> <p>13 Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And VC was Vincent Chng of Sony</p> <p>19 NEC Optiarc. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And in this conversation Mr. Chng</p> <p>25 informed you that he was, "Currently trying to</p>	<p style="text-align: right;">Page 57</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And Mr. Chng told you that PLDS</p> <p>5 had 100K in inventory of their Blu-Ray drive</p> <p>6 combo. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. Specifically Vincent said to you,</p> <p>12 "Did they tell you about their 110K inventory</p> <p>13 for HH BD combo."</p> <p>14 Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And Mr. Chng also stated to you,</p> <p>20 "HLDS's first source but they still have about</p> <p>21 60K inventory."</p> <p>22 Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 58</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And the information provided by</p> <p>4 Mr. Chng was the subject matter of the e-mail</p> <p>5 that you sent to Haw Chen, "PLDS has 110K HH</p> <p>6 BD combo inventory/HLDS has 60K."</p> <p>7 Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. In March 2009 you had another</p> <p>13 instant-messaging conversation with Vincent</p> <p>14 Chng of Sony Optiarc. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 MS. SCARLETT: Could the court</p> <p>20 reporter please provide the witness with</p> <p>21 Exhibit 387 and 387-A, document Bates</p> <p>22 number QUANTA_HAW_60290.</p> <p>23 Q. This is an e-mail that you sent</p> <p>24 to Haw Chen on March 23, 2009. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 60</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And the VC in this conversation</p> <p>4 was Vincent Chng of Sony Optiarc. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. In your e-mail you refer to</p> <p>10 Mr. Chng as informant number one. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Could you please turn to the</p> <p>16 second page of the document.</p> <p>17 Here you copy the contents of a</p> <p>18 conversation with someone you call informant</p> <p>19 number 2. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And your informant number two was</p> <p>25 Samson Chen from Sony Taiwan. Correct?</p>
<p style="text-align: right;">Page 59</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And this e-mail contains in part</p> <p>6 the contents of an instant-messaging</p> <p>7 conversation between you and VC. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And the e-mail also contains the</p> <p>13 contents of an instant-messaging conversation</p> <p>14 between you and a Samson?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. In the first instant-messaging</p> <p>20 conversation the first line of the</p> <p>21 conversation you say, "Good morning, Vincent."</p> <p>22 Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 61</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And Samson told you that, "Sony's</p> <p>7 price for half height mid write drives was</p> <p>8 17.X."</p> <p>9 Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And Samson also said that the</p> <p>15 price for channel sales was even higher than</p> <p>16 the price to OEMs. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Turn to the first page of the</p> <p>22 document, please.</p> <p>23 Based on the information you</p> <p>24 gained from Samson and Vincent Chng of Sony</p> <p>25 Optiarc, you told Haw Chen that, "The price</p>

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<p style="text-align: right;">Page 62</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 quoted by MTK Winson was a bluff."</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And isn't it true that in general</p> <p>9 the price for channel sales was higher than</p> <p>10 the price of drives sold to OEMs like Dell and</p> <p>11 HP?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. In March 2009 you had another</p> <p>17 instant-messaging conversation with Mr. Chng</p> <p>18 of Sony Optiarc regarding a Dell DVD-read</p> <p>19 write event. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 MS. SCARLETT: Could the court</p> <p>25 reporter please provide the witness with</p>	<p style="text-align: right;">Page 64</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Q. And Mr. Chng told you that he had</p> <p>3 spoken with HLDS, and they had placed fourth</p> <p>4 in the event. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And Mr. Chng informed you that</p> <p>10 HLDS's price was \$22.54. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. I'm sorry. Strike that last</p> <p>16 question.</p> <p>17 Mr. Chng informed you that HLDS's</p> <p>18 price was \$22.64. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And Mr. Chng also informed you</p> <p>24 that, "PLDS is number 3. They have a shortage</p> <p>25 issue. So all don't want to move."</p>
<p style="text-align: right;">Page 63</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 document previously marked as Exhibit</p> <p>3 388 and 388-A Bates-numbered</p> <p>4 OSI-SUB1526142.</p> <p>5 A. (Document review.)</p> <p>6 Q. This is an e-mail that you sent</p> <p>7 to Haw Chen on March 16, 2009. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And this reflects the contents of</p> <p>13 an instant-messaging conversation between you</p> <p>14 and Mr. Chng of Sony Optiarc. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. The VC reflected in this</p> <p>20 instant-messaging conversation is Vincent Chng</p> <p>21 of Sony Optiarc. Correct?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 65</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And Mr. Chng had also spoken with</p> <p>8 PLDS to get this information. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 MS. SCARLETT: Could the court</p> <p>14 reporter please provide the witness with</p> <p>15 the document previously marked as</p> <p>16 Exhibit 389 and 389-A.</p> <p>17 For those on the phone, this is a</p> <p>18 document Bates-numbered Q172481.</p> <p>19 A. (Document review.)</p> <p>20 Q. In May 2009 you had another</p> <p>21 instant-messaging conversation with Vincent</p> <p>22 Chng. Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 66</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And this is an e-mail that you</p> <p>4 sent to Haw Chen, among others, on May 26,</p> <p>5 2009. Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And this e-mail contains an</p> <p>11 instant-messaging conversation between you and</p> <p>12 Vincent Chng of Sony Optiarc. Correct?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And in this conversation Mr. Chng</p> <p>18 disclosed that he had spoken to PLDS regarding</p> <p>19 licensing fees on drives. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And in this e-mail, in this</p> <p>25 instant-messaging conversation you state, "P</p>	<p style="text-align: right;">Page 68</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. You also met with Dae Hwa (Bruce)</p> <p>4 Jeong of HLDS. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And Mr. Bruce Jeong of HLDS was</p> <p>10 also known as HLDS Bruce. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And Mr. Jeong was in charge of</p> <p>16 the ACER account at HLDS. Correct?</p> <p>17 MR. LAMBERT: Objection; form</p> <p>18 had.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 MS. SCARLETT: I'd like to mark</p> <p>23 as Exhibit 433, document Bates-numbered</p> <p>24 HLDS_CIV002745251.</p> <p>25 (Plaintiffs' Exhibit 433, e-mail</p>
<p style="text-align: right;">Page 67</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 company told you?"</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And by "P company" you meant</p> <p>9 PLDS. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. "P company" was, in fact, a code</p> <p>15 for PLDS. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And you used codes like "P</p> <p>21 company" to hide that you were speaking with</p> <p>22 your competitors. Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 69</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 from Bruce Jeong to Shu-ming Tzeng on</p> <p>3 October 16, 2008, Bates-numbered</p> <p>4 HLDS_CIV002745251, marked for</p> <p>5 identification, as of this date.)</p> <p>6 A. (Document review.)</p> <p>7 Q. This is an e-mail that you</p> <p>8 received from Bruce Jeong on October 16, 2008.</p> <p>9 Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Turn to the third page of the</p> <p>15 document, please.</p> <p>16 You state here that you've,</p> <p>17 "Invited the account manager who is in charge</p> <p>18 of ACER for the date tomorrow," don't you?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. That meant that you intended to</p> <p>24 meet HLDS Bruce on October 15, 2008. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 70</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Turn to page 2 of the document,</p> <p>6 please.</p> <p>7 Mr. Jeong suggested TGI Friday's</p> <p>8 as a place for the meeting. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Turn to the first page of the</p> <p>14 document, please.</p> <p>15 On October 16, 2008, Mr. Jeong</p> <p>16 said that, "It was nice to meet you</p> <p>17 yesterday." Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And Mr. Jeong asked you what</p> <p>23 QSI's forecast and business target were for</p> <p>24 the following year. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 72</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 provided a price to Dell, that it was one</p> <p>3 price for worldwide sales. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And you understood that</p> <p>9 regardless of what type of procurement method</p> <p>10 your customer used, they were interested in</p> <p>11 receiving the lowest price. Correct?</p> <p>12 MR. LAMBERT: Objection; form</p> <p>13 are.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And you understood that OEMs like</p> <p>18 HP and Dell received better pricing than ODMs.</p> <p>19 Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And you understood that OEMs like</p> <p>25 HP and Dell received better pricing than</p>
<p style="text-align: right;">Page 71</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And he told you that HLDS's</p> <p>6 forecast was 91 million but the next year's</p> <p>7 target was 10 million. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And in response you asked him if</p> <p>13 there was a typo in his number. Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And he clarified that he meant,</p> <p>19 in fact, 100 million for HLDS's forecast.</p> <p>20 Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. You understood that when QSI</p>	<p style="text-align: right;">Page 73</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 distributors. Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. You were aware that meeting with</p> <p>8 your competitors to exchange pricing</p> <p>9 information was illegal. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: Could the court</p> <p>15 reporter please provide the witness with</p> <p>16 Exhibit 371 and 371-A, document Bates</p> <p>17 number QUANTA_HAW_47154.</p> <p>18 Q. This is an e-mail that you</p> <p>19 received from Sally Huang on December 17,</p> <p>20 2008. Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And in this e-mail Sally Huang</p>

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<p style="text-align: right;">Page 74</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 warns QSI employees that they were to not</p> <p>3 mention quotation/price to their competitors.</p> <p>4 Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. You were aware that it was</p> <p>10 illegal for QSI employees to discuss price</p> <p>11 with their competitors. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And yet it was common practice at</p> <p>17 QSI to discuss prices with your competitors.</p> <p>18 Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. In fact, you believed it was part</p> <p>24 of your job to discuss prices with your</p> <p>25 competitors. Correct?</p>	<p style="text-align: right;">Page 76</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 of Boies, Schiller, and Flexner on behalf of</p> <p>3 the Sony defendants.</p> <p>4 Ms. Tzeng, since 2004 have you</p> <p>5 ever been employed by Sony Optiarc, Inc.?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Since 2004 have you ever been</p> <p>11 employed by Sony Optiarc America, Inc.?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Since 2004 have you ever been</p> <p>17 employed by Sony Electronics, Inc.?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Since 2004 have you ever been</p> <p>23 employed by Sony Corporation?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 75</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 MS. SCARLETT: Thank you,</p> <p>7 Ms. Tzeng, the plaintiffs have no</p> <p>8 further questions for you at this time.</p> <p>9 MR. REBLITZ-RICHARDSON: This is</p> <p>10 counsel for the Sony defendants Beko</p> <p>11 Reblitz-Richardson. If we can take a</p> <p>12 ten-minute break, I will have a few</p> <p>13 questions.</p> <p>14 THE VIDEOGRAPHER: The time now</p> <p>15 is 10:33 a.m. This concludes Tape 2.</p> <p>16 We're going off the video record.</p> <p>17 (Recess taken from 10:33 a.m. to</p> <p>18 10:38 a.m.)</p> <p>19 THE VIDEOGRAPHER: The time now</p> <p>20 is 10:38 a.m. This begins Tape 3.</p> <p>21 We're back on the record with Shu-ming</p> <p>22 Tzeng.</p> <p>23 EXAMINATION BY</p> <p>24 MR. REBLITZ-RICHARDSON:</p> <p>25 Q. This is Beko Reblitz-Richardson</p>	<p style="text-align: right;">Page 77</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. Who were you employed by during</p> <p>5 the 2004 to 2009 time period?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. During the 2004 through 2009 time</p> <p>11 period, what responsibilities, if any, did you</p> <p>12 have with respect to the sale of ODDs?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. In your experience, did prices</p> <p>18 for CD-ROM drives decline during the 2004</p> <p>19 through 2009 time period?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. In your experience, did prices</p> <p>25 for DVD-ROM drives decline during the 2004</p>

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<p style="text-align: right;">Page 78</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 through 2009 time period?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. In your experience, did prices</p> <p>8 for DVD-RW drives decline during the 2004 to</p> <p>9 2009 time period?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. In your experience, did prices</p> <p>15 for combo drives decline during the 2004 to</p> <p>16 2009 time period?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. In your experience, did prices</p> <p>22 for Blu-Ray drives decline during the 2004</p> <p>23 through 2009 time period?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 80</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 employees?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. During the 2004 through 2009 time</p> <p>8 period, what Dell employees, if any, did you</p> <p>9 communicate with?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Do you know someone named Alice</p> <p>15 Wu?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Is it your understanding that</p> <p>21 Alice Wu at some point worked for Dell?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 MS. SCARLETT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 79</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. During the 2004 through 2009 time</p> <p>5 period, did you personally participate in any</p> <p>6 Dell ODD procurement events?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. During the 2004 through 2009 time</p> <p>9 period, which QSI employees, if any,</p> <p>10 participated in one or more Dell ODD</p> <p>11 procurement events.</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. During the 2004 through 2009 time</p> <p>17 period, what role, if any, did QSI employees</p> <p>18 have in connection with determining ODD prices</p> <p>19 quoted to Dell?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. During the 2004 through 2009 time</p> <p>25 period, did you communicate with any Dell</p>	<p style="text-align: right;">Page 81</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MR. REBLITZ-RICHARDSON: I have</p> <p>4 additional questions for the witness,</p> <p>5 but in light of the answers given, I</p> <p>6 won't ask any further questions at this</p> <p>7 time. Thank you for your time today.</p> <p>8 MS. SCARLETT: Does anyone else</p> <p>9 have any further questions?</p> <p>10 Okay. Thank you very much,</p> <p>11 Ms. Tzeng, for your time today.</p> <p>12 THE COURT REPORTER: This is the</p> <p>13 court reporter. Can I ask you all to</p> <p>14 state your orders on the record please;</p> <p>15 when you would like the final, and if</p> <p>16 you would like a rough.</p> <p>17 MS. SCARLETT: This is Shana</p> <p>18 Scarlett from Hagens, Berman. We'll</p> <p>19 just take our regular transcript</p> <p>20 whenever it's ready. We have no need</p> <p>21 for a rough or a rush on this.</p> <p>22 MS. CHILDERS: This is Katie</p> <p>23 Childers, same.</p> <p>24 THE COURT REPORTER: Anyone else?</p> <p>25 MR. LAMBERT: Curt Lambert,</p>

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<p style="text-align: right;">Page 82</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 Quanta. We'll take the same order that</p> <p>3 we placed on Sunday night for the Haw</p> <p>4 Chen transcript.</p> <p>5 THE COURT REPORTER: Anyone else?</p> <p>6 THE VIDEOGRAPHER: All right.</p> <p>7 This is the videographer. The time now</p> <p>8 is 10:47 a.m. This concludes Tape 3 of</p> <p>9 3 of today's deposition of Ms. Tzeng.</p> <p>10 We're going off the record.</p> <p>11 (Time noted: 10:47 a.m.)</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 84</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 C E R T I F I C A T E</p> <p>3</p> <p>4 STATE OF NEW YORK)</p> <p>5 : ss.</p> <p>6 COUNTY OF NASSAU)</p> <p>7</p> <p>8 I, PATRICIA A. BIDONDE, a Notary</p> <p>9 Public within and for the State of New</p> <p>10 York, do hereby certify:</p> <p>11 That Shu-ming Tzeng, the witness</p> <p>12 whose deposition is hereinbefore set</p> <p>13 forth, was sworn by me and that such</p> <p>14 deposition is a true record of the</p> <p>15 testimony given by the witness.</p> <p>16 I further certify that I am not</p> <p>17 related to any of the parties to this</p> <p>18 action by blood or marriage, and that I</p> <p>19 am in no way interested in the outcome</p> <p>20 of this matter.</p> <p>21 IN WITNESS WHEREOF, I have</p> <p>22 hereunto set my hand this day,</p> <p>23 November 27, 2013.</p> <p>24</p> <p>25 <u>PATRICIA A. BIDONDE, RPR</u></p>																																																		
<p style="text-align: right;">Page 83</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 A C K N O W L E D G M E N T</p> <p>3</p> <p>4 STATE OF)</p> <p>5 : ss</p> <p>6 COUNTY OF)</p> <p>7</p> <p>8 I, Shu-ming Tzeng hereby certify</p> <p>9 that I have read the transcript of my</p> <p>10 testimony taken under oath in my</p> <p>11 deposition of November 20, 2013; that</p> <p>12 the transcript is a true, complete and</p> <p>13 correct record of my testimony, and that</p> <p>14 the answers on the record as given by me</p> <p>15 are true and correct.</p> <p>16</p> <p>17</p> <p>18 <u>Shu-ming Tzeng</u></p> <p>19</p> <p>20 Signed and subscribed to</p> <p>21 before me this _____</p> <p>22 day of _____, 2013.</p> <p>23</p> <p>24 _____</p> <p>25 Notary Public</p>	<p style="text-align: right;">Page 85</p> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 I N D E X</p> <table border="0"> <tr> <td>Examinations</td> <td style="text-align: right;">Page</td> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>MS. SCARLETT</td> <td style="text-align: right;">13</td> </tr> <tr> <td>4 MR. REBLITZ-RICHARDSON:</td> <td style="text-align: right;">75</td> </tr> <tr> <td>5 E X H I B I T S</td> <td></td> </tr> <tr> <td>6 Plaintiffs'</td> <td style="text-align: right;">Page Line</td> </tr> <tr> <td>7</td> <td></td> </tr> <tr> <td>8 Exhibit 433 e-mail from Bruce Jeong to</td> <td></td> </tr> <tr> <td>9 Shu-ming Tzeng on October</td> <td></td> </tr> <tr> <td>10 16, 2008, Bates-numbered</td> <td></td> </tr> <tr> <td>11 HLDS_CIV002745251.....</td> <td style="text-align: right;">68 25</td> </tr> <tr> <td>12</td> <td></td> </tr> <tr> <td>13</td> <td></td> </tr> <tr> <td>14</td> <td></td> </tr> <tr> <td>15</td> <td></td> </tr> <tr> <td>16</td> <td></td> </tr> <tr> <td>17</td> <td></td> </tr> <tr> <td>18</td> <td></td> </tr> <tr> <td>19</td> <td></td> </tr> <tr> <td>20</td> <td></td> </tr> <tr> <td>21</td> <td></td> </tr> <tr> <td>22</td> <td></td> </tr> <tr> <td>23</td> <td></td> </tr> <tr> <td>24</td> <td></td> </tr> <tr> <td>25</td> <td></td> </tr> </table>	Examinations	Page	3		MS. SCARLETT	13	4 MR. REBLITZ-RICHARDSON:	75	5 E X H I B I T S		6 Plaintiffs'	Page Line	7		8 Exhibit 433 e-mail from Bruce Jeong to		9 Shu-ming Tzeng on October		10 16, 2008, Bates-numbered		11 HLDS_CIV002745251.....	68 25	12		13		14		15		16		17		18		19		20		21		22		23		24		25	
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1 S. Tzeng - Confidential Restricted

2 C E R T I F I C A T E

3

4 STATE OF NEW YORK)

5 : ss.

6 COUNTY OF NASSAU)

7

8 I, PATRICIA A. BIDONDE, a Notary

9 Public within and for the State of New

10 York, do hereby certify:

11 That Shu-ming Tzeng, the witness

12 whose deposition is hereinbefore set

13 forth, was sworn by me and that such

14 deposition is a true record of the

15 testimony given by the witness.

16 I further certify that I am not

17 related to any of the parties to this

18 action by blood or marriage, and that I

19 am in no way interested in the outcome

20 of this matter.

21 IN WITNESS WHEREOF, I have

22 hereunto set my hand this day,

23 November 27, 2013.

24 

25 PATRICIA A. BIDONDE, RPR

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<div style="text-align: right; font-weight: bold;">Page 86</div> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 INDEX OF REFERENCED EXHIBITS</p> <p>3 Plaintiffs' Page Line</p> <p>4 Exhibit 359 Document Bates-numbered</p> <p>5 Q86434.....21 21</p> <p>6 Exhibit 407 Document Bates number</p> <p>7 QUANTA_HAW_8529.....24 8</p> <p>8 Exhibit 397 Document Bates-numbered</p> <p>9 QUANTA_HAW_35336.....27 11</p> <p>10 Exhibit 373 Document Bates-numbered</p> <p>11 2254640.....35 14</p> <p>12 Exhibit 382 Document Bates number</p> <p>13 Q261745.....38 19</p> <p>14 Exhibit 424 Document Bates number</p> <p>15 QUANTA_HAW_5842.....41 8</p> <p>16 Exhibit 383 Document Bates-numbered</p> <p>17 Q123066.....44 25</p> <p>18 Exhibit 384 Document Bates-numbered</p> <p>19 QUANTA_HAW_14855.....47 18</p> <p>20 Exhibit 385 Document Bates-numbered</p> <p>21 Q256590.....51 2</p> <p>22 Exhibit 386 Document Bates number</p> <p>23 QUANTA_HAW_37186.....54 19</p> <p>24</p> <p>25</p>	<div style="text-align: right; font-weight: bold;">Page 88</div> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 ERRATA SHEET FOR THE TRANSCRIPT OF:</p> <p>3 Case Name: IN RE OPTICAL DISK DRIVE PRODUCTS</p> <p>4 Dep Date: November 20, 2013</p> <p>5 Deponent: Shu-ming Tzeng</p> <p>6 Pg. Ln. Now Reads Should Read Reason</p> <p>7 _____</p> <p>8 _____</p> <p>9 _____</p> <p>10 _____</p> <p>11 _____</p> <p>12 _____</p> <p>13 _____</p> <p>14 _____</p> <p>15 _____</p> <p>16 _____</p> <p>17 _____</p> <p>18 _____</p> <p>19 _____</p> <p>20 _____</p> <p>21 _____</p> <p>22 Signed and subscribed to before me</p> <p>23 this ____ day of _____, 2013</p> <p>24 _____</p> <p>25 Notary Public</p>
<div style="text-align: right; font-weight: bold;">Page 87</div> <p>1 S. Tzeng - Confidential Restricted</p> <p>2 INDEX OF REFERENCED EXHIBITS (CONT'D)</p> <p>3 Plaintiffs' Page Line</p> <p>4 Exhibit 387 Document Bates number</p> <p>5 QUANTA_HAW_60290.....58 21</p> <p>6 Exhibit 388 Document Bates-numbered</p> <p>7 QSI-SUB1526142.....63 3</p> <p>8 Exhibit 389 Document Bates-numbered</p> <p>9 Q172481.....65 18</p> <p>10 Exhibit 371 Document Bates number</p> <p>11 QUANTA_HAW_47154.....73 16</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	

EXHIBIT 3

REDACTED VERSION

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Page 1

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE OPTICAL DISK DRIVE)

PRODUCTS ANTITRUST)

LITIGATION)

-----) No. 3:10-md-2143

) RS

This document relates to:)

ALL INDIRECT PURCHASER)

ACTIONS)

_____)

CONFIDENTIAL RESTRICTED
VIDEOTAPED DEPOSITION OF YA-PING HUANG
Taipei, Taiwan
Thursday, November 21, 2013

Reported by:

PATRICIA A. BIDONDE, RPR

JOB #: 114047

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<p style="text-align: right;">Page 2</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6 November 21, 2013</p> <p>7 8:40 a.m.</p> <p>8</p> <p>9</p> <p>10 Confidential Restricted</p> <p>11 Videotaped Deposition of Ya-Ping Huang,</p> <p>12 held at the Grand Hyatt Hotel, Taipei,</p> <p>13 Taiwan, before Patricia A. Bidonde, a</p> <p>14 Registered Professional Reporter and</p> <p>15 Notary Public of the State of New York.</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 4</p> <p>1</p> <p>2 A P P E A R A N C E S: (Cont'd)</p> <p>3</p> <p>4 ALSTON & BIRD, LLP</p> <p>5 Attorneys for Dell, Inc. and Dell Products,</p> <p>6 L.P.</p> <p>7 One Atlantic Center</p> <p>8 1201 West Peachtree Street</p> <p>9 Atlanta, Georgia 30309-3242</p> <p>10 BY: KATIE CHILDERS, ESQ.</p> <p>11 (via telephone)</p> <p>12 (404) 881-7000</p> <p>13</p> <p>14 VINSON & ELKINS, LLP</p> <p>15 Attorneys for Hitachi, LTD.</p> <p>16 2200 Pennsylvania Avenue NW</p> <p>17 Suite 500 West</p> <p>18 Washington, D.C. 20037-1701</p> <p>19 BY: HANNAH WILSON, ESQ.</p> <p>20 (via telephone)</p> <p>21 (202) 639-6553</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 3</p> <p>1</p> <p>2 A P P E A R A N C E S:</p> <p>3</p> <p>4 HAGENS, BERMAN, SOBOL, SHAPIRO LLP</p> <p>5 Attorneys for Indirect Purchaser Plaintiffs</p> <p>6 715 Hearst Avenue</p> <p>7 Suite 202</p> <p>8 Berkeley, California 94710</p> <p>9 BY: SHANA E. SCARLETT, ESQ.</p> <p>10 (via telephone)</p> <p>11 (510) 725-3000</p> <p>12</p> <p>13 BOIES, SCHILLER & FLEXNER, LLP</p> <p>14 Attorneys for Sony Corporation, Sony Optiarc</p> <p>15 America, Inc. and Sony Optiarc, Inc.</p> <p>16 1999 Harrison Street</p> <p>17 Suite 900</p> <p>18 Oakland, California 94612</p> <p>19 BY: BEKO O. REBLITZ-RICHARDSON, ESQ.</p> <p>20 (via telephone)</p> <p>21 (510) 874-1000</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 5</p> <p>1</p> <p>2 A P P E A R A N C E S: (Cont'd)</p> <p>3</p> <p>4 LATHAM & WATKINS, LLP</p> <p>5 Attorneys for Toshiba Corporation, Toshiba</p> <p>6 Samsung Storage Technologies Corporation,</p> <p>7 Toshiba Samsung Storage Technologies</p> <p>8 Corporation Korea, and TAIS</p> <p>9 505 Montgomery Street</p> <p>10 Suite 1900</p> <p>11 San Francisco, California 94111</p> <p>12 BY: STEPHANIE SONG, ESQ.</p> <p>13 (via telephone)</p> <p>14 (415) 395-8240</p> <p>15</p> <p>16 NOVAK DRUCE CONNOLLY BOVE & QUIGG LLP</p> <p>17 Attorneys for the Quanta entities</p> <p>18 1007 North Orange Street</p> <p>19 Ninth Floor</p> <p>20 Wilmington, Delaware 19801</p> <p>21 BY: CURT M. LAMBERT, ESQ.</p> <p>22 (via telephone)</p> <p>23 (302) 658-9141</p> <p>24</p> <p>25</p>

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<p>1 2 A P P E A R A N C E S: (Cont'd) 3 4 STATE OF FLORIDA 5 OFFICE OF THE ATTORNEY GENERAL 6 PL-1, The Capitol 7 Tallahassee, Florida 32399 8 BY: COLIN FRASER, ESQ. 9 (Via telephone) 10 (850) 414-3300 11 12 ASIA LAW FOREIGN LEGAL AFFAIRS LAW FIRM 13 Attorneys for Witness 14 17F, Suite B, No. 167 15 Dunhua North Road 16 Taipei 10549, Taiwan 17 BY: CHRISTOPHER M. NEUMEYER, ESQ. 18 886-2 2717-1999 19 20 ALSO PRESENT: 21 JOSEPH TSENG, Mandarin Interpreter 22 CHRISTIAN BIDONDE, Videographer 23 24 25</p>	<p>1 2 P R O C E E D I N G S 3 THE VIDEOGRAPHER: This is the 4 videotaped deposition of Ya-Ping Huang 5 in the matter of In Re: Optical Disk 6 Drive Products Antitrust Litigation, 7 this document relates to all actions; 8 filed in the United States District 9 Court, Northern District of California, 10 San Francisco Division; Case Number 11 3:10-md-2143 RS. 12 This deposition is being held at 13 the Grand Hyatt Taipei, Taiwan on 14 November 21, 2013. 15 My name is Chris Bidonde from US 16 Legal Support. And I am the video 17 specialist. The court reporter today is 18 Patricia Bidonde also from US Legal 19 Support. 20 We are going on the record at 21 approximately 8:40 a.m. Taipei time. 22 Counsel will now state their 23 appearances for the record. 24 MS. SCARLETT: This is Shana 25 Scarlett from Hagens, Berman, Sobol, and</p>
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<p>1 2 IT IS HEREBY STIPULATED AND 3 AGREED, by and between the attorneys for 4 the respective parties herein, that 5 filing and sealing be and the same are 6 hereby waived. 7 IT IS FURTHER STIPULATED AND 8 AGREED that all objections, except as to 9 the form of the question, shall be 10 reserved to the time of the trial. 11 IT IS FURTHER STIPULATED AND 12 AGREED that the within deposition may be 13 sworn to and signed before any officer 14 authorized to administer an oath, with 15 the same force and effect as if signed 16 and sworn to before the Court. 17 18 19 20 21 22 23 24 25</p>	<p>1 2 Shapiro for the indirect purchaser 3 plaintiffs. 4 MR. LAMBERT: Curt Lambert of 5 Novak Druce Connolly Bove and Quigg on 6 behalf of Quanta defendants. 7 MS. CHILDERS: This is Katie 8 Childers of Alston and Bird LLP on 9 behalf of plaintiffs Dell, Inc. and Dell 10 Products LP. 11 MR. FRASER: Colin Fraser on 12 behalf of State of Florida. 13 MR. REBLITZ-RICHARDSON: Beko 14 Reblitz-Richardson of Boies, Schiller 15 and Flexner on behalf of the Sony 16 defendants. 17 MR. NEUMEYER: Chris Neumeyer of 18 Asia Law on behalf of the witness. 19 MS. WILSON: This is Hannah 20 Wilson of Vinson and Elkins on behalf of 21 Hitachi Limited. 22 MS. SONG: This is Stephanie Song 23 from Latham and Watkins on behalf of 24 TSSTK, TSST, Toshiba Corporation, and 25 TAIS.</p>

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<p style="text-align: right;">Page 10</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 THE VIDEOGRAPHER: Okay. Will</p> <p>3 the court reporter please swear in the</p> <p>4 translator and the witness.</p> <p>5 J O S E P H T S E N G, was duly sworn by a</p> <p>6 Notary Public to interpret the</p> <p>7 questions from English into Mandarin,</p> <p>8 and the answers from Mandarin into</p> <p>9 English.</p> <p>10 Y A - P I N G H U A N G, called as a witness,</p> <p>11 having been duly sworn by a Notary</p> <p>12 Public, was examined and testified</p> <p>13 through the official interpreter as</p> <p>14 follows:</p> <p>15 MR. LAMBERT: This is Curt</p> <p>16 Lambert for Quanta, before the</p> <p>17 examination begins, counsel for Quanta</p> <p>18 would like the record to reflect the</p> <p>19 following positions:</p> <p>20 To the extent that the witness</p> <p>21 invokes Fifth Amendment rights, our</p> <p>22 position is that each invocation is a</p> <p>23 separate assertion of Fifth Amendment</p> <p>24 rights to the extent the plaintiffs</p> <p>25 would seek to establish an adverse</p>	<p style="text-align: right;">Page 12</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Isn't it true that you also use</p> <p>3 the name Sally Huang as an English name in</p> <p>4 your business communications?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Who is your employer?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Isn't it true that from August</p> <p>15 2004 to the present you've been employed by</p> <p>16 Quanta Storage, Inc.?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And QSI is in the business of</p> <p>22 manufacturing and selling optical disk drives.</p> <p>23 Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 11</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 inference, plaintiffs would need to meet</p> <p>3 the applicable requirements with respect</p> <p>4 to each question and each invocation on</p> <p>5 an individual invocation basis.</p> <p>6 Form objections include</p> <p>7 objections to translations and also we</p> <p>8 have a standing objection to the use of</p> <p>9 any PLDS or HLDS documents or language</p> <p>10 from those documents as a basis to seek</p> <p>11 to sustain an adverse inference.</p> <p>12 Thank you.</p> <p>13 EXAMINATION BY</p> <p>14 MS. SCARLETT:</p> <p>15 Q. Good morning, this is Shana</p> <p>16 Scarlett representing the indirect purchaser</p> <p>17 plaintiffs.</p> <p>18 Could the witness please state</p> <p>19 her name for the record.</p> <p>20 A. Ya-ping Huang.</p> <p>21 Q. Do you go by any other name?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 13</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. QSI and its subsidiary company</p> <p>5 Quanta Storage America together both</p> <p>6 manufacture and sell optical disk drives to</p> <p>7 customers in the United States. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Quanta Storage, Inc. is also</p> <p>13 known as QSI. Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Please state your business</p> <p>19 address.</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Please state your home address.</p> <p>25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 14</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Do you understand that you're</p> <p>6 testifying under oath here today just as if</p> <p>7 you were testifying in a court of law?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Do you understand that being</p> <p>13 under oath means that you're obligated by law</p> <p>14 to tell the truth?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Do you understand that you're</p> <p>20 here today regarding an antitrust class action</p> <p>21 lawsuit in which QSI is one of the defendants?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 16</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Isn't it true that when you write</p> <p>3 to your US customers, you do so in English?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. How would you describe your</p> <p>9 ability to read English?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. How would you describe your</p> <p>15 ability to write in English?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Have you ever spoken to any of</p> <p>21 QSI's customers in English?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 15</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Do you understand that this</p> <p>3 lawsuit was brought by purchasers of optical</p> <p>4 disk drives and products containing optical</p> <p>5 disk drives?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Do you understand that plaintiffs</p> <p>11 contend that the defendants, including your</p> <p>12 employer, QSI, illegally conspired the</p> <p>13 stabilize the price of optical disk drives</p> <p>14 from at least 2004 through 2009?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Isn't it true that in your</p> <p>20 business dealings with US customers, you</p> <p>21 communicate in English?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 17</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Have you ever written to any of</p> <p>3 QSI's customers in English?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You've chosen to use a translator</p> <p>9 here today. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Are you on any medications today</p> <p>15 that would impair ability to testify?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Is there in I reason why you</p> <p>21 can't give truthful testimony today if you</p> <p>22 answer questions?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 18</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Do you understand that your</p> <p>4 testimony today potentially could be read or</p> <p>5 shown to the judge or jury in this case?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And you're making a choice here</p> <p>11 today to assert your Fifth Amendment</p> <p>12 protection. Correct?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. Do you understand that the Fifth</p> <p>18 Amendment to the United States Constitution</p> <p>19 allows a witness to refuse to provide</p> <p>20 testimony that may provide evidence that could</p> <p>21 be used in criminal proceedings against that</p> <p>22 witness?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 20</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Ms. Huang, is your employer, QSI,</p> <p>7 paying Mr. Neumeyer to represent you today?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. If you continue to assert the</p> <p>13 Fifth Amendment today, is it fair for the</p> <p>14 judge or jury to presume that you've had every</p> <p>15 opportunity to consider your choice?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 MS. SCARLETT: Could the court</p> <p>21 reporter please provide the witness with</p> <p>22 Exhibit 434, which is a copy of a</p> <p>23 LinkedIn profile web page.</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 (Plaintiffs' Exhibit 434, copy of</p>
<p style="text-align: right;">Page 19</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Do you understand that your</p> <p>4 testimony today may be used against your</p> <p>5 employer, QSI, and other defendants in this</p> <p>6 lawsuit?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. Do you understand that when you</p> <p>12 refuse to answer a question because of your</p> <p>13 constitutional protections, it's possible that</p> <p>14 the judge or jury may use that choice against</p> <p>15 QSI and presume that testimony you might have</p> <p>16 given here would have been against QSI's</p> <p>17 interests?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Have you had the opportunity to</p> <p>23 speak with your lawyer, Mr. Neumeyer, about</p> <p>24 all the potential effects of asserting the</p> <p>25 Fifth Amendment in your deposition here today?</p>	<p style="text-align: right;">Page 21</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 LinkedIn profile web page for Sally</p> <p>3 Huang, marked for identification, as of</p> <p>4 this date.)</p> <p>5 Q. Ms. Huang, is this your current</p> <p>6 LinkedIn profile web page?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. Ms. Huang, you've been employed</p> <p>12 by Quanta Storage, Inc. from August 2004 to</p> <p>13 the present. Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Ms. Huang, isn't it true that you</p> <p>19 represent, under the heading, experience that</p> <p>20 you were employed by QSI in Taiwan as an</p> <p>21 account manager from August 2004 through June</p> <p>22 2007?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 22</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And isn't it true that you were</p> <p>4 employed by QSI as an account manager in</p> <p>5 Houston, Texas from June 2007 through June</p> <p>6 2008?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And in September of 2008 you were</p> <p>12 promoted to sales director for QSI in Taiwan.</p> <p>13 Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And you have maintained that role</p> <p>19 as sales director to the present time.</p> <p>20 Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. While you have been employed at</p>	<p style="text-align: right;">Page 24</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And both Voka Chen and Haw Chen</p> <p>6 had the authority and responsibilities within</p> <p>7 QSI to set ODD prices for customers. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Voka Chen and Haw Chen report</p> <p>13 directly to the president of QSI, Shi-chi Ho.</p> <p>14 Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. When you were an account manager</p> <p>20 in Houston, Texas from June 2007 through June</p> <p>21 2008, you were responsible for the HP, Lenovo,</p> <p>22 QCI, Clevo, Dixon, Uniwell, and Intel</p> <p>23 accounts. Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 23</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 QSI, your work e-mail has always been</p> <p>3 sally.huang@qsi.tw.com. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You use this e-mail in the</p> <p>9 ordinary course of your job duties and</p> <p>10 responsibilities at QSI. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. As an account manager for QSI,</p> <p>16 you reported to, at one point, the general</p> <p>17 manager and vice president, Voka Chen.</p> <p>18 Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And you currently report to QSI</p> <p>24 assistant vice president, Haw Chen. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 25</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 MS. SCARLETT: Could the court</p> <p>5 reporter please provide the witness with</p> <p>6 Exhibit 359, a document Bates number</p> <p>7 Q86434.</p> <p>8 A. (Document review.)</p> <p>9 Q. Your name appears on the top left</p> <p>10 hand corner of this document. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And this document reflects an</p> <p>16 organizational chart of QSI. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Isn't it correct that you were in</p> <p>22 charge of the accounts listed in the far left</p> <p>23 corner?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>

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<p style="text-align: right;">Page 26</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. Isn't it correct that TOP refers</p> <p>5 to HP?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Isn't it true that VOL refers to</p> <p>11 Lenovo?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Isn't it true that OWN refers to</p> <p>17 Quanta Computer?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Isn't it true that CLV refers to</p> <p>23 Clevo?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 28</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Isn't it true that in 2008 when</p> <p>7 you moved to Taiwan as a QSI sales director,</p> <p>8 QSI employees Caroline Lin of the HP account,</p> <p>9 Evon Yu of the Dixon account, Phoebe Chu of</p> <p>10 the Viao account, Gina Liu of the Lenovo and</p> <p>11 Fujitsu accounts, and Kathy Ji of the Epson</p> <p>12 account all reported to you?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And when you moved from Houston,</p> <p>18 Texas to tie occupy, QSI employee Caroline Lin</p> <p>19 took over your position as HP account manager.</p> <p>20 Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. While you were in the United</p>
<p style="text-align: right;">Page 27</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. Isn't it true that DIO refers to</p> <p>5 Dixon?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Isn't it true that UNO refers to</p> <p>11 Uniwell?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Isn't it true that INT refers to</p> <p>17 Intel?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And these accounts I just listed,</p> <p>23 were the accounts that you were responsible</p> <p>24 for while you were an account manager in</p> <p>25 Houston. Correct?</p>	<p style="text-align: right;">Page 29</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 States as an account manager, your cell phone</p> <p>3 number was 832-661-1496. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Isn't it true that when QSI</p> <p>9 Caroline Lin took over your position in</p> <p>10 Houston, she also took over your United States</p> <p>11 cell phone number. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Isn't it true that from 2004</p> <p>17 through 2009, you and your employer, QSI,</p> <p>18 considered PLDS, Philips and Lite-On Digital</p> <p>19 Solutions Corp. to be a competitor in the</p> <p>20 manufacture and sale of optical disk drives?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Isn't it true that you knew that</p>

8 (Pages 26 to 29)

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<p style="text-align: right;">Page 30</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 JC Lim, an employee of PLDS was the global</p> <p>3 account manager for the HP account based out</p> <p>4 of Houston, Texas?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Isn't it true that you exchanged</p> <p>10 nonpublic competitively sensitive pricing</p> <p>11 information with JC Lim of PLDS via e-mail and</p> <p>12 on the phone while you were the account</p> <p>13 manager working for QSI in Houston, Texas?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Isn't it true that between 2008</p> <p>19 and 2009, you and JC Lim would come to a</p> <p>20 common understanding of what prices your</p> <p>21 respective companies would charge their</p> <p>22 customers for optical disk drives?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 32</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Isn't it true that you exchanged</p> <p>6 nonpublic competitively sensitive information</p> <p>7 with Susie Peng of PLDS by instant messenger?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Isn't it true that between 2008</p> <p>13 and 2009 you and Susie Peng would come to a</p> <p>14 common understanding on what prices your</p> <p>15 respective companies would charge their</p> <p>16 customers for optical disk drives?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Isn't it true that you're also</p> <p>22 aware that Lindsay Lu worked for PLDS as the</p> <p>23 regional account manager for the HP account?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 31</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Isn't it true that while you were</p> <p>4 employed I QSI between 2007 and 2009 you and</p> <p>5 JC Lim of PLDS would discuss and come to a</p> <p>6 common understanding as to the amount of</p> <p>7 supply of optical disk drives you would offer</p> <p>8 your customers?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Isn't it true that you knew that</p> <p>14 Susie Peng was a sales manager for the optical</p> <p>15 disk drives business unit of PLDS?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Isn't it true that while you were</p> <p>21 employed by QSI between 2007 and 2009 you and</p> <p>22 Susie Peng would exchange nonpublic pricing</p> <p>23 information about your companies' price</p> <p>24 quotation to their customers?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 33</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. Isn't it true that from 2004</p> <p>5 through 2009 you and your employer, QSI,</p> <p>6 considered HLDS, also known as Hitachi LG Data</p> <p>7 Storage, Inc., a competitor in the manufacture</p> <p>8 and sale of optical disk drives?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. While you were employed by QSI</p> <p>14 from 2007 through 2009, you knew that Eugene</p> <p>15 Yang was a senior OEM account manager from</p> <p>16 HLDS. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And isn't it true that while you</p> <p>22 were employed by QSI from 2007 through 2009,</p> <p>23 you exchanged competitively sensitive pricing</p> <p>24 information with Eugene Yang of HLDS via</p> <p>25 e-mail and on the phone?</p>

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<p style="text-align: right;">Page 34</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And isn't it true that while you</p> <p>7 worked for QSI from 2008 through 2009 you and</p> <p>8 Eugene Yang of HLDS would come to a common</p> <p>9 understanding on what prices your companies</p> <p>10 would quote its customers for optical disk</p> <p>11 drives?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. While you were employed by QSI</p> <p>17 from 2007 to 2009, you knew that Bruce Jeong</p> <p>18 of HLDS was a senior sales director on the</p> <p>19 ACER account. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And isn't it true that while you</p> <p>25 were employed by QSI from 2007 through 2009,</p>	<p style="text-align: right;">Page 36</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Isn't it true that while you were</p> <p>4 employed by QSI from 2007 through 2009 Tango</p> <p>5 Lin was a sales representative for TSST's</p> <p>6 Taiwan business unit selling optical disk</p> <p>7 drives?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And isn't it true that you met</p> <p>13 with and exchanged nonpublic competitively</p> <p>14 sensitive information with Tango Lin?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And isn't it true that from 2007</p> <p>20 through 2009 you and Tango Lin would come to a</p> <p>21 common understanding as to the prices your</p> <p>22 respective companies would charge customers</p> <p>23 for optical disk drives?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 35</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 you exchanged competitively sensitive</p> <p>3 nonpublic pricing information with Bruce Jeong</p> <p>4 of HLDS via e-mail and in-person meetings?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Isn't it true that from 2007</p> <p>10 through 2009 you and Bruce Jeong would come to</p> <p>11 a common understanding as to the prices your</p> <p>12 respective companies would charge customers</p> <p>13 for optical disk drives?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Isn't it true that from 2004</p> <p>19 through 2009 you and your employer, QSI,</p> <p>20 considered TSST, Toshiba Samsung Storage</p> <p>21 Technology, to be a competitor in the</p> <p>22 manufacture and sale of optical disk drives?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 37</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. Isn't it true that from 2004</p> <p>5 through 2009 you and your employer, QSI,</p> <p>6 considered Pioneer a competitor in the</p> <p>7 manufacture and sale of optical disk drives?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Isn't it true that from 2007</p> <p>13 through 2009 you and employees of Pioneer</p> <p>14 would come to a common understanding as to the</p> <p>15 prices your respective companies would charge</p> <p>16 customers for optical disk drives?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. You agree that between 2007 and</p> <p>22 2009 you cooperated with your competitors by</p> <p>23 sharing nonpublic competitively sensitive</p> <p>24 business information. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 38</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. You cooperated with your</p> <p>6 competitors by providing them with information</p> <p>7 about QSI's past, present, and future pricing</p> <p>8 information. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. You and other QSI employees</p> <p>14 provided your competitors nonpublic</p> <p>15 information about QSI's pricing, sales volume,</p> <p>16 past and future demand, quality and capacity,</p> <p>17 and what rank you would like to achieve at</p> <p>18 procurement events. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. The reason you provided this</p> <p>24 information to your competitors was to help</p> <p>25 each other lessen competition in the optical</p>	<p style="text-align: right;">Page 40</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 (Recess taken from 9:30 a.m. to</p> <p>3 9:46 a.m.)</p> <p>4 THE VIDEOGRAPHER: The time is</p> <p>5 now 9:46 a.m. This begins Tape Number</p> <p>6 2. We're back on the record with</p> <p>7 Ya-ping Huang.</p> <p>8 MR. LAMBERT: This is Curt</p> <p>9 Lambert, counsel for Quanta. It appears</p> <p>10 that some of my objections have not been</p> <p>11 recorded on the LiveNote. It's my</p> <p>12 understanding that the official</p> <p>13 transcript will be checked with the</p> <p>14 audio recording, and so all objections</p> <p>15 that have been made will also be</p> <p>16 reflected in the official transcript.</p> <p>17 MS. SONG: Also, this is --</p> <p>18 sorry. This is Stephanie Song from</p> <p>19 Latham and Watkins. And I just want to</p> <p>20 note for the record that our</p> <p>21 understanding is that an objection</p> <p>22 lodged by one party will be applied to</p> <p>23 everyone. So we just wanted to put that</p> <p>24 on the record. Thank you.</p> <p>25 MR. LAMBERT: And one last thing</p>
<p style="text-align: right;">Page 39</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 disk drive markets so that the price of</p> <p>3 optical disk drives was not reduced. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. The reason you and your</p> <p>9 competitors exchanged nonpublic pricing</p> <p>10 information with one another was to achieve</p> <p>11 the goal of selling optical disk drives to</p> <p>12 your customers at higher prices than if you</p> <p>13 did not provide this information to each</p> <p>14 other. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 THE COURT REPORTER: Could you</p> <p>17 give me one moment, please. This is the</p> <p>18 court reporter, we lost the connection.</p> <p>19 Let me just try.</p> <p>20 Can we go off the record for a</p> <p>21 moment, please.</p> <p>22 MS. SCARLETT: Absolutely.</p> <p>23 THE VIDEOGRAPHER: The time now</p> <p>24 is 9:30 a.m. This concludes Tape 1.</p> <p>25 We're going off the video record.</p>	<p style="text-align: right;">Page 41</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 for Curt Lambert, it's my understanding</p> <p>3 that the official transcript for last</p> <p>4 night and Sunday night will also be</p> <p>5 checked with the voice recording so that</p> <p>6 the official transcripts will reflect</p> <p>7 all objections including the ones that</p> <p>8 were missed tonight and any that were</p> <p>9 missed last night and Sunday night on</p> <p>10 LiveNote. Thank you.</p> <p>11 MS. SCARLETT: Okay. This is</p> <p>12 Shana Scarlett for the indirect</p> <p>13 purchasers again. I believe that there</p> <p>14 was a question pending at the point that</p> <p>15 we started having technical</p> <p>16 difficulties. So I would like to have</p> <p>17 the question read back to the witness</p> <p>18 unless the court reporter didn't</p> <p>19 properly capture it in which case I'm</p> <p>20 happy to repeat it.</p> <p>21 THE INTERPRETER: This is the</p> <p>22 interpreter. I have the question.</p> <p>23 Allow me to translate the question.</p> <p>24 MS. SCARLETT: Thank you.</p> <p>25 (Interpreter translates previous</p>

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<p style="text-align: right;">Page 42</p> <p>1 Y. Huang - Confidential Restricted 2 question.) 3 MR. LAMBERT: Objection; form. 4 Objection; form. 5 A. On advice of my counsel, I invoke 6 my Fifth Amendment rights under the US 7 Constitution and decline to answer. 8 BY MS. SCARLETT: 9 Q. You and your competitors would 10 exchange your desired rank in procurement 11 events prior to the events occurring. 12 Correct? 13 MR. LAMBERT: Objection; form. 14 A. On advice of my counsel, I invoke 15 my Fifth Amendment rights under the US 16 Constitution and decline to answer. 17 Q. And the reason that you and your 18 competitors would share an agreed upon rank -- 19 as upon what rank you intended to bid at 20 procurement events, was so that you would not 21 need to continue bidding prices lower once you 22 had reached your agreed-upon and predetermined 23 rank. Correct? 24 MR. LAMBERT: Objection; form. 25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 44</p> <p>1 Y. Huang - Confidential Restricted 2 and would be able to keep prices than if you 3 had to compete on price. Correct? 4 MR. LAMBERT: Objection; form. 5 A. On advice of my counsel, I invoke 6 my Fifth Amendment rights under the US 7 Constitution and decline to answer. 8 Q. When you reached a common 9 understanding on price with your competitors, 10 oftentimes it was for your customers in the 11 United States that purchased optical disk 12 drives. Correct? 13 MR. LAMBERT: Objection; form. 14 A. On advice of my counsel, I invoke 15 my Fifth Amendment rights under the US 16 Constitution and decline to answer. 17 Q. From 2007 through 2009 you agreed 18 to exchange confidential information with each 19 of your competitors about potential future 20 prices for ODDs sold to ACER. Correct? 21 MR. LAMBERT: Objection; form. 22 A. On advice of my counsel, I invoke 23 my Fifth Amendment rights under the US 24 Constitution and decline to answer. 25 Q. And the reason you did this with</p>
<p style="text-align: right;">Page 43</p> <p>1 Y. Huang - Confidential Restricted 2 my Fifth Amendment rights under the US 3 Constitution and decline to answer. 4 Q. Prior to quoting prices to your 5 customers, you and your competitors would 6 share with one another your anticipated prices 7 that you were going to quote customers. 8 Correct? 9 MR. LAMBERT: Objection; form. 10 A. On advice of my counsel, I invoke 11 my Fifth Amendment rights under the US 12 Constitution and decline to answer. 13 Q. Isn't it true that before quoting 14 prices to customers, you and other QSI 15 employees would reach agreement with your 16 competitors not to quote below a certain price 17 level? 18 MR. LAMBERT: Objection; form. 19 A. On advice of my counsel, I invoke 20 my Fifth Amendment rights under the US 21 Constitution and decline to answer. 22 Q. You and your competitors would 23 reach agreement on price before quoting to 24 customers so that you would not undercut each 25 other's prices in negotiations with customers</p>	<p style="text-align: right;">Page 45</p> <p>1 Y. Huang - Confidential Restricted 2 each of your competitors was so that ACER had 3 to pay more than it otherwise would have for 4 its ODD purchases. Correct? 5 MR. LAMBERT: Objection; form. 6 A. On advice of my counsel, I invoke 7 my Fifth Amendment rights under the US 8 Constitution and decline to answer. 9 Q. You understood that by agreeing 10 to exchange pricing information with your 11 competitors, it would help you and your 12 competitors to charge ACER more for ODDs than 13 if you and your competitors had not provided 14 each other with this pricing information. 15 Correct? 16 MR. LAMBERT: Objection; form. 17 A. On advice of my counsel, I invoke 18 my Fifth Amendment rights under the US 19 Constitution and decline to answer. 20 Q. You were aware that before 2007 21 other HLDS employees had agreed to exchange 22 confidential information with each other about 23 potential future prices for ODDs sold to ACER. 24 Correct? 25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 46</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And you understood that the</p> <p>6 reason other QSI employees did this was to --</p> <p>7 your competitors, was so ACER had to pay more</p> <p>8 than it otherwise would have for its ODD</p> <p>9 purchases. Correct?</p> <p>10 MR. LAMBERT: Objection to form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. You understood that by other QSI</p> <p>15 employees agreeing to exchange pricing</p> <p>16 information with competitors, it would help</p> <p>17 QSI and its competitors to charge ACER more</p> <p>18 for ODDs than if QSI and its competitors had</p> <p>19 not provided each other with this information.</p> <p>20 Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. From 2007 through 2009 you agreed</p>	<p style="text-align: right;">Page 48</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Isn't it true that you and your</p> <p>6 competitors agreed to exchange quality</p> <p>7 rankings?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. The reason you and your</p> <p>13 competitors did this was to understand whether</p> <p>14 one or more of you had a competitive advantage</p> <p>15 over the others. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. You also exchanged information</p> <p>21 with your competitors as to who was or was not</p> <p>22 competing for specific sales events. Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 47</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 to exchange confidential information with your</p> <p>3 competitors about future expected sales</p> <p>4 volumes. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. You understood that by agreeing</p> <p>10 to exchange confidential information with your</p> <p>11 competitors about future expected sales</p> <p>12 volume, it would help you and your competitors</p> <p>13 to decide how much to charge customers.</p> <p>14 Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. One of your goals in exchanging</p> <p>20 future sales volume information with your</p> <p>21 competitors was to help you charge higher</p> <p>22 prices to your customers than you otherwise</p> <p>23 would have had you not exchanged this</p> <p>24 information. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 49</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. You believe this information was</p> <p>4 important in helping you determine what price</p> <p>5 to sell optical disk drives to your customers.</p> <p>6 Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. Part of your job duties and</p> <p>12 responsibilities as an account manager for QSI</p> <p>13 included contacting your competitors and</p> <p>14 obtaining competitively sensitive nonpublic</p> <p>15 business information. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And when you contacted your</p> <p>21 competitors to obtain competitively sensitive</p> <p>22 business information, you would not only ask</p> <p>23 for your competitors' information, but you</p> <p>24 would also provide QSI's information to your</p> <p>25 competitors as well. Correct?</p>

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<p style="text-align: right;">Page 50</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Oftentimes when you would contact</p> <p>7 competitors and exchange information, you</p> <p>8 would not only provide each other with your</p> <p>9 respective information, but you would also</p> <p>10 share what you had heard about other</p> <p>11 competitors. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. You were aware that your</p> <p>17 superiors Voka Chen and Haw Chen were also</p> <p>18 directly contacting QSI's competitors and</p> <p>19 discussing competitively sensitive</p> <p>20 information. Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And you were aware that the</p>	<p style="text-align: right;">Page 52</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. In fact, you encouraged those</p> <p>5 that directly reported to you to contact</p> <p>6 competitors and find out their future pricing,</p> <p>7 production plans, and procurement event</p> <p>8 rankings. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. You would also exchange with your</p> <p>14 competitors information on intended</p> <p>15 aggressiveness in bidding at specific customer</p> <p>16 accounts. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Have you been interviewed by the</p> <p>22 United States Department of Justice regarding</p> <p>23 optical disk drives sold in the United States?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 51</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 employees that reported to you were also</p> <p>3 having direct contact with their competitors</p> <p>4 and exchanging competitively sensitive</p> <p>5 business information. Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And you knew that QSI employees</p> <p>11 on the sales team that reported to you were</p> <p>12 contacting their competitors because they</p> <p>13 would send you reports on what they had</p> <p>14 learned. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And when you learned information</p> <p>20 about your competitors from those that</p> <p>21 reported to you, you would provide this</p> <p>22 information to your superiors Haw Chen or Voka</p> <p>23 Chen. Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 53</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. Have you testified before a grand</p> <p>5 jury regarding optical disk drives?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Have you personally as opposed to</p> <p>11 your employer QSI produced any documents to</p> <p>12 the United States Department of Justice?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. Have you personally, as opposed</p> <p>18 to QSI, given any e-mails to the United States</p> <p>19 Department of Justice?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Have you personally, as opposed</p> <p>25 to your employer, QSI, prepared any written</p>

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<p style="text-align: right;">Page 54</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 statement for the United States Department of</p> <p>3 Justice?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 MS. SCARLETT: The plaintiffs</p> <p>9 would like to mark as Exhibit 435 the</p> <p>10 document Bates-numbered Q446228.</p> <p>11 Could the court reporter please</p> <p>12 provide the witness with this document.</p> <p>13 (Plaintiffs' Exhibit 435, e-mail</p> <p>14 from Evon Yu to Ya-Ping Huang dated</p> <p>15 November 6, 2009, Bates-numbered</p> <p>16 Q446228, marked for identification, as</p> <p>17 of this date.)</p> <p>18 A. (Document review.)</p> <p>19 Q. Isn't it true, Ms. Huang, that</p> <p>20 Exhibit 435 is an e-mail from QSI employee</p> <p>21 Evon Yu dated November 6, 2009, that you</p> <p>22 received while you were employed by QSI?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 56</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And the stated purpose of this</p> <p>8 meeting was for you to share market</p> <p>9 information with your competitor. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And isn't it true that when you</p> <p>15 met with Bruce Jeong of HLDS, you exchanged</p> <p>16 competitively sensitive business information</p> <p>17 with him including future pricing for your</p> <p>18 respective companies and your desired rank for</p> <p>19 procurement events?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And isn't it true that during</p> <p>25 this October 15, 2008, meeting with your</p>
<p style="text-align: right;">Page 55</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And attached to Evon's e-mail is</p> <p>4 a request from the Department of Justice for</p> <p>5 you and other QSI employees to fill out a</p> <p>6 chart listing the meetings you had with other</p> <p>7 ODDs producers since 2004. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Could the witness please turn to</p> <p>13 the last page of the document.</p> <p>14 In connection with the DOJ's</p> <p>15 request, Evon Yu sent to you and Shu-ming</p> <p>16 Tzeng her chart listing two meetings that you</p> <p>17 and she had with your competitors. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And the first meeting that Evon</p> <p>23 Yu lists on her report to the DOJ took place</p> <p>24 on October 15, 2008, and was between you,</p> <p>25 Shu-ming Tzeng, and Bruce Jeong of HLDS.</p>	<p style="text-align: right;">Page 57</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 competitor Bruce Jeong of HLDS, you also</p> <p>3 exchanged inventory levels and discussed</p> <p>4 aggressiveness in bidding for your respective</p> <p>5 companies?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. The second meeting Evon Yu lists</p> <p>11 in her chart for the DOJ took place on</p> <p>12 December 12, 2008, and was between you, Evon</p> <p>13 Yu, and Tango Lin of TSST. Isn't that</p> <p>14 correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Again, the stated purpose of this</p> <p>20 meeting was to share market information with</p> <p>21 your competitor. Correct?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 58</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. And isn't it true that at this</p> <p>3 second meeting on December 12, 2008, you</p> <p>4 exchanged competitively sensitive information</p> <p>5 with your competitor at TSST such as your</p> <p>6 respective companies' market funds for the</p> <p>7 ACER account, a report on inventory levels for</p> <p>8 your respective companies, customer-specific</p> <p>9 qualification status, and production and</p> <p>10 capacity information for your respective</p> <p>11 companies?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. Ms. Huang, at least as early as</p> <p>17 December 17, 2008, you were aware that it was</p> <p>18 illegal for competitors to discuss quotation</p> <p>19 and price with their competitors. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And you were aware of this in</p> <p>25 part because Quanta merged with AUO Optonics</p>	<p style="text-align: right;">Page 60</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 to the QSI sales staff while you were employed</p> <p>3 by QSI in the ordinary course of your</p> <p>4 business?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And on December 17, 2008, you</p> <p>10 forwarded to several QSI employees an article</p> <p>11 about the criminal fines being imposed by the</p> <p>12 US Department of Justice in price fixing case</p> <p>13 for TFT LCD panels. Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And you directed these sales</p> <p>19 employees to not mention quotation price when</p> <p>20 talking with competitors. Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And yet following this e-mail,</p>
<p style="text-align: right;">Page 59</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 in 2006 and AUO Optonics was being criminally</p> <p>3 prosecuted for price fixing TFT LCD panels by</p> <p>4 the United States Department of Justice.</p> <p>5 Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. In fact, QSI's related company</p> <p>11 AUO was found guilty in a criminal trial in</p> <p>12 the United States and fined hundreds of</p> <p>13 millions of dollars and its executives were</p> <p>14 sentenced to prison. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 MS. SCARLETT: Could the court</p> <p>20 reporter please provide the witness with</p> <p>21 Exhibit 371 and 371-A, a document</p> <p>22 Bates-numbered QUANTA_HAW_47154.</p> <p>23 A. (Document review.)</p> <p>24 Q. Isn't it true that Exhibit 371 is</p> <p>25 an e-mail that you sent on December 17, 2008,</p>	<p style="text-align: right;">Page 61</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 you personally continued to have meetings with</p> <p>3 your competitors where you exchanged pricing</p> <p>4 information. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And you continued to contact your</p> <p>10 competitors and discuss quotations to ODD</p> <p>11 customers. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And you were aware that your</p> <p>17 superior Haw Chen continued to exchange price</p> <p>18 and quotation information with your</p> <p>19 competitors. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And you continued to encourage</p> <p>25 those that reported to you to have direct</p>

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<p style="text-align: right;">Page 62</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 competitor contact and exchange and agree upon</p> <p>3 price quotes to competitors -- to customers.</p> <p>4 Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. In fact, you commended your</p> <p>10 direct sales reports for information they</p> <p>11 provided from competitors. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And you continued to approve</p> <p>17 expense reimbursements for meetings with</p> <p>18 competitors. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. Ms. Huang, you are aware that</p> <p>24 QSI's customers looked to a large market</p> <p>25 research company Techno Systems Research, also</p>	<p style="text-align: right;">Page 64</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And you did this because you knew</p> <p>7 that if TSR reported lower prices, QSI would</p> <p>8 be forced to lower its prices to its</p> <p>9 customers. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. In fact, you contacted TSR and</p> <p>15 asked them to revise certain reports if you</p> <p>16 did not like the prices quoted by your</p> <p>17 competitors. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. You even asked your competitors</p> <p>23 to complain to TSR so that TSR would revise</p> <p>24 its report when the price trends they reported</p> <p>25 were too low. Correct?</p>
<p style="text-align: right;">Page 63</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 known as TSR, to see what price trends were in</p> <p>3 the optical disk drive industry and to assist</p> <p>4 them in negotiating prices with ODD suppliers.</p> <p>5 Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And you were not happy when other</p> <p>11 optical disk drive manufacturers reported</p> <p>12 aggressive prices to TSR, because you knew</p> <p>13 that QSI's customers would look at TSR reports</p> <p>14 and use the pricing trends as a reference when</p> <p>15 negotiating prices with optical disk drive</p> <p>16 suppliers. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And isn't it true that to prevent</p> <p>22 your customers from using the TSR reports to</p> <p>23 get QSI to lower prices, you contacted your</p> <p>24 competitors and told them not to provide</p> <p>25 aggressive pricing to TSR?</p>	<p style="text-align: right;">Page 65</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 MS. SCARLETT: Could the court</p> <p>7 reporter please provide the witness with</p> <p>8 Exhibit 412, a document Bates number</p> <p>9 QUANTA_HAW-2376.</p> <p>10 A. (Document review.)</p> <p>11 Q. Turning to the third page of this</p> <p>12 exhibit, please, isn't it true that you sent</p> <p>13 an e-mail in July of 2008 to Yamada Tomomi,</p> <p>14 Amino Masafumi of Sony, and Haw Chen and Gina</p> <p>15 Liu of QSI while you were employed by QSI in</p> <p>16 the ordinary course of your business?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Ms. Huang, directing your</p> <p>22 attention to the sentence on the third page of</p> <p>23 Exhibit 412 where you write in your e-mail,</p> <p>24 "Please don't make any promise to Lenovo that</p> <p>25 we will follow TSR price trends. Also, I</p>

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<p style="text-align: right;">Page 66</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 informed other ODD makers to make same</p> <p>3 complain to TSR. Could you ask your marketing</p> <p>4 to not provide aggressive price to TSR. TSR</p> <p>5 told me that most of Japanese ODD makers agree</p> <p>6 to their price trend, but such condition will</p> <p>7 impact our real business."</p> <p>8 Did you write that, Ms. Huang?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And what you meant by this is</p> <p>14 that customers like Lenovo would read the TSR</p> <p>15 report and expect QSI to, "Lower prices</p> <p>16 consistent with those reported by other ODD</p> <p>17 suppliers to TSR."</p> <p>18 Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And you directly contacted Sony</p> <p>24 and other optical disk drive manufacturers and</p> <p>25 told them not to, "Low or aggressive prices to</p>	<p style="text-align: right;">Page 68</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Ms. Huang, isn't it true that</p> <p>8 while you were an account manager at QSI</p> <p>9 between at least 2007 and 2009 you had</p> <p>10 repeated communications with Lindsay Lu, Susie</p> <p>11 Peng, and JC Lim of PLDS where you would</p> <p>12 exchange sensitive business information?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. Isn't it true that an April 9,</p> <p>18 2008, you spoke with Lindsay Lu, a regional</p> <p>19 account manager handling the HP account for</p> <p>20 PLDS, and provided her with the exact price</p> <p>21 QSI input for the HP mPC slim SATA DVD-read</p> <p>22 write eRFQ round 2 on April 8, 2008, as well</p> <p>23 as QSI's desired rank for the ongoing HP</p> <p>24 procurement event?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 67</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 TSR so that customers like Lenovo could not</p> <p>3 use the reported lower prices to negotiate a</p> <p>4 lower price for optical disk drives from QSI."</p> <p>5 Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. As you state in your e-mail, you</p> <p>11 asked other ODD manufacturers to complain to</p> <p>12 TSR to get the reported prices to be higher</p> <p>13 than what they previously had reported.</p> <p>14 Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And when you stated this will</p> <p>20 impact your real business, what you are saying</p> <p>21 is that QSI will be forced to lower their</p> <p>22 prices if the true aggressive prices are</p> <p>23 reported, and customers are allowed to see</p> <p>24 what other suppliers are quoting, because it</p> <p>25 will likely cause QSI to lower its prices.</p>	<p style="text-align: right;">Page 69</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. You informed Lindsay Lu at PLDS</p> <p>6 that QSI quoted or input \$26.30 for the SATA</p> <p>7 drives and that QSI intended not to be number</p> <p>8 5; and that QSI would move its price in round</p> <p>9 2. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And Lindsay Lu of PLDS, in turn,</p> <p>15 informed you what price PLDS input and what</p> <p>16 ranks they intended to secure. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. You were also aware that JC Lim</p> <p>22 of PLDS had spoken with HLDS and was informed</p> <p>23 what price HLDS had quoted as well as what</p> <p>24 rank HLDS intended to obtain. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 70</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. By exchanging with PLDS QSI's</p> <p>6 exact price quote and desired ranking in the</p> <p>7 HP eRFQ, this enabled your companies to not</p> <p>8 have to lower their prices once the desired</p> <p>9 rank was achieved, and they could maintain a</p> <p>10 higher price quote than if you continued to</p> <p>11 bid against one another. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 Exhibit 436, a document Bates-numbered</p> <p>19 ODDCIV-105746.</p> <p>20 (Plaintiffs' Exhibit 436,</p> <p>21 document Bates-numbered ODDCIV-105746,</p> <p>22 marked for identification, as of this</p> <p>23 date.)</p> <p>24 A. (Document review.)</p> <p>25 Q. Isn't it true that the</p>	<p style="text-align: right;">Page 72</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 and Susie Peng of HLDS were in regular</p> <p>3 communication with one other, exchanging your</p> <p>4 respective companies' pricing information for</p> <p>5 the ACER account?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. You shared with one another the</p> <p>11 price you intended to quote to ACER. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And you would share with one</p> <p>17 another whether you were going to lower your</p> <p>18 price on future quotes. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And you would share with one</p> <p>24 another how much you would provide ACER in</p> <p>25 market funds for the ACER account. Correct?</p>
<p style="text-align: right;">Page 71</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 information that Lindsay Lu provides in this</p> <p>3 e-mail to JC Lim of PLDS per the conversation</p> <p>4 with QSI yesterday is information that you</p> <p>5 provided to her about the HP eRFQ?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. Isn't it true that the \$26.30 for</p> <p>11 SATA drive pricing and rank information that</p> <p>12 she references in this e-mail is information</p> <p>13 that you provided to Lindsay Lu?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Isn't it true that you and</p> <p>19 Lindsay Lu would speak several times a month</p> <p>20 and exchange your -- companies' respective</p> <p>21 price and rank for the HP account?</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Ms. Huang, isn't it true that you</p>	<p style="text-align: right;">Page 73</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 MS. SCARLETT: Could the court</p> <p>7 reporter please provide the witness with</p> <p>8 the document marked as Exhibit 410,</p> <p>9 410-A, which has Bates number</p> <p>10 QUANTA_HAW_68974.</p> <p>11 A. (Document review.)</p> <p>12 Q. Isn't it true that Exhibit 410 is</p> <p>13 an e-mail that you sent on May 13, 2009, to</p> <p>14 Haw Chen, Evon Yu, and other QSI employees</p> <p>15 while you were employed by QSI in the ordinary</p> <p>16 course of your business?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And in this e-mail you inform</p> <p>22 your fellow QSI employees that Susie, who is</p> <p>23 Susie Peng a PLDS employee, is asking if QSI</p> <p>24 will lower your price to ACER for Q3.</p> <p>25 Correct?</p>

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<p style="text-align: right;">Page 74</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. The Susie you refer to in this</p> <p>7 e-mail is Susie Peng of PLDS. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And in this e-mail you inform Haw</p> <p>13 Chen, amongst others, that you informed Susie</p> <p>14 of PLDS that QSI was afraid not to lower its</p> <p>15 price to ACER. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And Susie informed you that PLDS</p> <p>21 was not planning to lower for the first run</p> <p>22 because they probably could not get the OPU.</p> <p>23 Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 76</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. And this information that you</p> <p>3 passed on to Haw Chen who set pricing for QSI,</p> <p>4 enabled QSI to know that it did not need to</p> <p>5 lower its price to ACER since its competitors</p> <p>6 were not planning on lowering their prices.</p> <p>7 Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 MS. SCARLETT: Could the court</p> <p>13 reporter please provide the witness with</p> <p>14 Exhibit 409 and 409-A, a document</p> <p>15 Bates-numbered QUANTA_HAW_45535.</p> <p>16 A. (Document review.)</p> <p>17 Q. Isn't it true that Exhibit 409 is</p> <p>18 an e-mail that you sent on December 5, 2008,</p> <p>19 to Evon Yu and Haw Chen while you were</p> <p>20 employed by QSI in the ordinary course of your</p> <p>21 business?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 75</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And by OPU, you meant optical</p> <p>5 pick up. Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And Susie of PLDS also informed</p> <p>11 you that HLDS told her that they did not want</p> <p>12 to lower their prices to ACER. Correct?</p> <p>13 MR. LAMBERT: Objection to form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And knowing that two of your main</p> <p>18 competitors on the ACER account did not plan</p> <p>19 to lower their price to ACER before you quoted</p> <p>20 was useful information to you in setting QSI's</p> <p>21 price to ACER, wasn't it?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 77</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. And Ms. Huang, in this e-mail you</p> <p>3 have cut and pasted into the body of the</p> <p>4 e-mail a series of instant messaging --</p> <p>5 instant messages -- between yourself and Susie</p> <p>6 Peng of PLDS. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. In the e-mail, "Sally in Taiwan"</p> <p>12 refers to you. Correct?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. "Susie, so busy no time for</p> <p>18 restroom break," refers to Susie Peng of PLDS.</p> <p>19 Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. In this instant-messaging</p> <p>25 conversation, you and Susie discuss the fact</p>

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<p style="text-align: right;">Page 78</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 that Ambrose Song, the account representative</p> <p>3 for ACER, has requested that both of your</p> <p>4 companies provide a market fund. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And in your conversation, Susie</p> <p>10 informed you that she is preparing the</p> <p>11 response to Ambrose of ACER for her GM because</p> <p>12 she needs to submit it for the VP's approval.</p> <p>13 Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And you request Susie to call you</p> <p>19 the next week after she's done. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 MS. SCARLETT: Could the court</p> <p>25 reporter please provide the witness with</p>	<p style="text-align: right;">Page 80</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And you would frequently directly</p> <p>7 contact your competitors to check on and</p> <p>8 verify information the customers told you.</p> <p>9 Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And this e-mail is an instance</p> <p>15 where you directly contacted PLDS to check and</p> <p>16 verify that the information the customer,</p> <p>17 ACER, provided to you was correct, isn't it?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. You also report that PLDS</p> <p>23 informed you that they only had a limited</p> <p>24 capacity, "Because HP stole the factory's</p> <p>25 capacity," and that PLDS will be more</p>
<p style="text-align: right;">Page 79</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Exhibit 406 and 406-A, a document Bates</p> <p>3 number 37747.</p> <p>4 A. (Document review.)</p> <p>5 Q. Isn't it true that Exhibit 406 is</p> <p>6 an e-mail that you sent on October 28, 2008,</p> <p>7 to Evon Yu, Haw Chen, and other QSI employees</p> <p>8 while you were employed by QSI in the ordinary</p> <p>9 course of your business?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. And in this e-mail you write,</p> <p>15 "PLDS said their share is approximately 10</p> <p>16 percent."</p> <p>17 Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And you are responding to Evon</p> <p>23 Yu's report that Sheila, the ACER account rep,</p> <p>24 gave her regarding suppliers' share of the</p> <p>25 ACER account. Correct?</p>	<p style="text-align: right;">Page 81</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 aggressive on the next year's model. Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And this is all information that</p> <p>8 you learned by directly contacting PLDS.</p> <p>9 Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Oftentimes when Ambrose from ACER</p> <p>15 would tell you what other companies were</p> <p>16 quoting, you would directly contact the other</p> <p>17 companies to verify what you were told.</p> <p>18 Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. You would directly contact</p> <p>24 employees at HLDS to verify and agree on what</p> <p>25 price you would quote to ACER. Correct?</p>

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<p style="text-align: right;">Page 82</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And you would directly contact</p> <p>7 PLDS to verify and agree on prices to quote to</p> <p>8 ACER. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 MS. SCARLETT: Could the court</p> <p>14 reporter please provide the witness with</p> <p>15 Exhibit 405 and 405-A, a document</p> <p>16 Bates-numbered QUANTA_HAW_43019.</p> <p>17 A. (Document review.)</p> <p>18 Q. Isn't it true that Exhibit 405 is</p> <p>19 an e-mail that you sent on November 21, 2008,</p> <p>20 to Haw Chen and other QSI employees while you</p> <p>21 were employed by QSI in the ordinary course of</p> <p>22 your business?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 84</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 they said there's no way they will quote lower</p> <p>3 than \$24. Their current quote is less than</p> <p>4 24.50."</p> <p>5 Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. When you reached out to Eugene</p> <p>11 Yang in HLDS to not only confirm what was</p> <p>12 being told to you by Ambrose, but to get</p> <p>13 agreement on what you and your competitor</p> <p>14 would quote to ACER. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 THE VIDEOGRAPHER: Counsel, we're</p> <p>20 going to need to make a tape change in a</p> <p>21 few minutes.</p> <p>22 MS. SCARLETT: Okay. A couple</p> <p>23 more questions, and then we can break?</p> <p>24 THE VIDEOGRAPHER: Yeah.</p> <p>25 MS. SCARLETT: Okay.</p>
<p style="text-align: right;">Page 83</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And in this e-mail you report to</p> <p>4 Haw Chen what Ambrose from ACER informed you</p> <p>5 prices for your competitors were quoting to</p> <p>6 Ambrose at ACER. Correct? Strike that. Let</p> <p>7 me rephrase that question.</p> <p>8 In this e-mail you report to Haw</p> <p>9 Chen what Ambrose of ACER informed you</p> <p>10 regarding the prices of your competitors.</p> <p>11 Correct?</p> <p>12 MR. LAMBERT: Objection to form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And you state that you do not</p> <p>17 believe the numbers Ambrose is providing.</p> <p>18 Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. You then write in an e-mail to</p> <p>24 Haw Chen, the following info is what I</p> <p>25 gathered from a couple of questions, HLDS,</p>	<p style="text-align: right;">Page 85</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. You then write, "PLDS, their</p> <p>3 current quote is more than 24.50. Their boss</p> <p>4 said that they need to be profitable and only</p> <p>5 make exceptions for HP."</p> <p>6 Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And based on this information</p> <p>12 that you learned from HLDS and PLDS, you</p> <p>13 recommended that QSI quote 24.40 to ACER.</p> <p>14 Correct?</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And so you had a direct</p> <p>19 communication with a PLDS employee who</p> <p>20 informed you of their exact quote to ACER.</p> <p>21 Correct?</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. And you exchanged with PLDS what</p>

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<p style="text-align: right;">Page 86</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 QSI intended to quote to ACER as well.</p> <p>3 Correct?</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 THE VIDEOGRAPHER: We're out of</p> <p>8 time.</p> <p>9 MS. SCARLETT: Okay. So let's go</p> <p>10 off the record for a ten-minute break.</p> <p>11 THE VIDEOGRAPHER: The time now</p> <p>12 is 11:07 a.m. This concludes Tape 2.</p> <p>13 We're going off the video record.</p> <p>14 (Recess taken from 11:07 a.m. to</p> <p>15 11:19 a.m.)</p> <p>16 THE VIDEOGRAPHER: The time now</p> <p>17 is 11:19 a.m. This begins Tape 3.</p> <p>18 We're back on the record with Ya-ping</p> <p>19 Huang.</p> <p>20 MR. LAMBERT: This is Curt</p> <p>21 Lambert, counsel for Quanta. Apparently</p> <p>22 there appears to be some issues with the</p> <p>23 international dial-in number. And I</p> <p>24 would like the record to reflect that I</p> <p>25 have objected to the form of every</p>	<p style="text-align: right;">Page 88</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 And as for the callback that counsel</p> <p>3 just announced on record, we would ask</p> <p>4 that counsel would provide that in</p> <p>5 writing to all the plaintiffs including</p> <p>6 those not on today's call.</p> <p>7 MR. REBLITZ-RICHARDSON: This is</p> <p>8 Beko Reblitz-Richardson, counsel for the</p> <p>9 Sony defendants. I would just like to</p> <p>10 state that I have heard Mr. Lambert</p> <p>11 consistently object over the conference</p> <p>12 call line. So to the extent that those</p> <p>13 are not reflected in the record, I</p> <p>14 believe he has stated the objections to</p> <p>15 each and every question, other than the</p> <p>16 first one, both yesterday and today.</p> <p>17 MS. SCARLETT: Could the court</p> <p>18 reporter please provide the witness with</p> <p>19 Exhibit 398 and 398-A, a document</p> <p>20 Bates-numbered QUANTA_HAW_47029.</p> <p>21 BY MS. SCARLETT:</p> <p>22 Q. Isn't it true that Exhibit 398 is</p> <p>23 an e-mail that you sent on December 16, 2008,</p> <p>24 to Caroline Lin and Haw Chen and other QSI</p> <p>25 employees while you were employed by QSI in</p>
<p style="text-align: right;">Page 87</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 question, other than the first question</p> <p>3 that has been asked tonight as well as</p> <p>4 every question, other than the first</p> <p>5 question that was asked last night,</p> <p>6 without exception.</p> <p>7 I also, on behalf of Quanta,</p> <p>8 would like to implement paragraph 10 of</p> <p>9 the stipulated protective order, the</p> <p>10 callback provision as to document Bates</p> <p>11 numbers Q000446228 through Q000446239</p> <p>12 and request return of that document</p> <p>13 pursuant to paragraph 10 of the</p> <p>14 stipulated protective order, which is</p> <p>15 docket number 323. Thank you.</p> <p>16 MS. SCARLETT: This is Shana</p> <p>17 Scarlett, counsel for the indirect</p> <p>18 purchaser plaintiffs. We do not agree</p> <p>19 that objections have been lodged to</p> <p>20 every question, either today or in the</p> <p>21 past couple of days of deposition</p> <p>22 testimony.</p> <p>23 We believe that the audio and</p> <p>24 video record is accurately capturing</p> <p>25 both our questions and the objections.</p>	<p style="text-align: right;">Page 89</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 the ordinary course of your business?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Not only did you directly contact</p> <p>8 employees at PLDS to gather competitively</p> <p>9 sensitive information, but you were aware that</p> <p>10 employees that reported to you were doing so</p> <p>11 as well. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And you knew this because the</p> <p>17 employees that reported to you would send you</p> <p>18 e-mail reports sharing with you the</p> <p>19 information that they received directly from</p> <p>20 PLDS, employees such as JC Lim. Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. In the first part of Exhibit 398,</p>

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<p style="text-align: right;">Page 90</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Caroline Lin informed, e-mailed you and</p> <p>3 informed you that she had received information</p> <p>4 from PLDS sales JC that afternoon. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And you understood this to mean</p> <p>10 that she obtained the information directly</p> <p>11 from JC Lim of PLDS. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. And Caroline reports to you about</p> <p>17 PLDS's problems with the HP account inventory</p> <p>18 levels and pull rates for the HP account and</p> <p>19 qualification status. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And at the end Caroline let's you</p> <p>25 and the others on the e-mail know that she'll</p>	<p style="text-align: right;">Page 92</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Not only did you encourage</p> <p>7 Caroline Lin to directly contact competitors</p> <p>8 and obtain information, but as her supervisor</p> <p>9 you also signed off on her expense reports</p> <p>10 where she submitted reimbursement for expenses</p> <p>11 for meetings with competitors. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 Exhibit 364 and 364-A, a document</p> <p>19 Bates-numbered QUANTA_HAW-61411.</p> <p>20 A. (Document review.)</p> <p>21 Q. Ms. Huang, isn't it true that</p> <p>22 Exhibit 364 is an e-mail that you and Haw Chen</p> <p>23 received on March 30, 2009, from Caroline Lin</p> <p>24 seeking reimbursement for business expenses</p> <p>25 while you were employed by QSI in the ordinary</p>
<p style="text-align: right;">Page 91</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 be having a chat once or twice a month with JC</p> <p>3 Lim. So if you want her to find out any other</p> <p>4 information to let her know. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And you write back to Caroline</p> <p>10 and praise her and commented it was a good</p> <p>11 report. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. You also state that PLDS Taiwan</p> <p>17 sales just MSN'ed you. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And this refers to an instant</p> <p>23 message that you just received directly from a</p> <p>24 PLDS employee in Taiwan to check on the HP</p> <p>25 business status. Correct?</p>	<p style="text-align: right;">Page 93</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 course of your business?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. And it was part of your job</p> <p>8 duties and responsibilities at QSI to review</p> <p>9 your direct reports' expense reports and sign</p> <p>10 off on them. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Could you please turn to page 5</p> <p>16 of the document. It's actually the</p> <p>17 attachment. So it's the document Bates</p> <p>18 numbered QUANTA_HAW_61412, and then it's page</p> <p>19 5 of that document.</p> <p>20 THE INTERPRETER: The Bates</p> <p>21 numbers are all the same.</p> <p>22 MS. SCARLETT: The Bates numbers</p> <p>23 are all the same because it was produced</p> <p>24 in native format. There are page</p> <p>25 numbers at the bottom of the page. And</p>

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<p style="text-align: right;">Page 94</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 I want her to look at page 5 of that.</p> <p>3 A. (Document review.)</p> <p>4 Q. At least two of the items on this</p> <p>5 page have Caroline Lin seeking reimbursement</p> <p>6 for a snack with JC Lim of PLDS. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And you knew from previous</p> <p>12 reports that Caroline Lin was meeting with JC</p> <p>13 Lim of PLDS and sharing competitively</p> <p>14 sensitive business information. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Ms. Huang, isn't it true that you</p> <p>20 and JC Lim of PLDS communicated regularly via</p> <p>21 telephone?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 96</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 ODDCIV-5384137, which is the second page of</p> <p>3 the document. You'll see that under the</p> <p>4 wireless number 281-660-8363 in handwriting is</p> <p>5 the letters "JC." And this --</p> <p>6 MR. LAMBERT: Objection.</p> <p>7 MS. SCARLETT: I'm sorry. I'm</p> <p>8 not done with my question.</p> <p>9 Q. This handwriting in the document</p> <p>10 was produced to us as is with the handwriting</p> <p>11 already present.</p> <p>12 You see the handwriting "JC"</p> <p>13 under the record. Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. Turning to page ODDCIV-5384147,</p> <p>19 isn't it true these phone records list each</p> <p>20 phone call to and from JC Lim's mobile phone</p> <p>21 including the dates, time of call, phone</p> <p>22 number, calls, whether it was incoming or</p> <p>23 outgoing, and the minutes the phone call</p> <p>24 lasted for. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 95</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Isn't it true that you would talk</p> <p>3 with one another on your work landlines as</p> <p>4 well as on your cell phone?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. The telephone number for JC Lim</p> <p>10 who was an employee of PLDS a competitor to</p> <p>11 QSI was 281-660-8363. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 the document Exhibit 437, which is</p> <p>19 Bates-numbered ODDCIV-5384136.</p> <p>20 (Plaintiffs' Exhibit 437,</p> <p>21 document Bates-numbered ODDCIV-5384136,</p> <p>22 marked for identification, as of this</p> <p>23 date.)</p> <p>24 A. (Document review.)</p> <p>25 Q. Please turn to the page numbered</p>	<p style="text-align: right;">Page 97</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Ms. Huang, your phone records for</p> <p>6 the mobile phone number 832-661-1496 were not</p> <p>7 produced by you or QSI in this litigation.</p> <p>8 Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Looking at page ODDCIV-5384147,</p> <p>14 isn't it true, Ms. Huang, that as reflected on</p> <p>15 item 348, JC Lim of PLDS called you on July 1,</p> <p>16 2008, at 10:13 a.m. and you spoke with him for</p> <p>17 five minutes.</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Ms. Huang, isn't it true that as</p> <p>23 reflected in item 349, JC Lim of PLDS called</p> <p>24 you on July 1, 2008, at 10:56 a.m. for one</p> <p>25 minute?</p>

25 (Pages 94 to 97)

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<p style="text-align: right;">Page 98</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Ms. Huang, isn't it true that as</p> <p>7 reflected in item 360, JC Lim of PLDS called</p> <p>8 you on July 1, 2008, at 4:33 p.m. and you</p> <p>9 spoke with him for 11 minutes.</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Ms. Huang, isn't it true that as</p> <p>15 reflected in item 372, JC Lim of PLDS called</p> <p>16 you on July 2, 2008, at 11:02 for two minutes.</p> <p>17 Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. Ms. Huang, isn't it true that as</p> <p>23 reflected in item 373, JC Lim of PLDS called</p> <p>24 you on July 2, 2008, at 11:19 a.m. for two</p> <p>25 minutes?</p>	<p style="text-align: right;">Page 100</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 you on July 8, 2008, at 1:43 p.m. for two</p> <p>3 minutes?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 (Telephone interruption.)</p> <p>9 Q. Ms. Huang, isn't it true that as</p> <p>10 reflected in item 445, JC Lim of PLDS received</p> <p>11 an incoming call from you at 832-661-1496 on</p> <p>12 July 8, 2008, at 3:29 p.m. and you spoke with</p> <p>13 him for 16 minutes?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SCARLETT: Could the court</p> <p>19 reporter please mark for the deposition</p> <p>20 Exhibit 438, a document Bates-numbered</p> <p>21 ODDCIV-5384261.</p> <p>22 (Plaintiffs' Exhibit 438, AT&T</p> <p>23 telephone bill and phone record for</p> <p>24 281-660-8363, Bates-numbered</p> <p>25 ODDCIV-5384261, marked for</p>
<p style="text-align: right;">Page 99</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Ms. Huang, isn't it true that as</p> <p>7 reflected in item 374, JC Lim of PLDS called</p> <p>8 you on July 2, 2008, at 11:20 a.m. for one</p> <p>9 minute?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Ms. Huang, isn't it true that as</p> <p>15 reflected in item 375, JC Lim of PLDS called</p> <p>16 you at 11:38 a.m. for two minutes?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Ms. Huang, turning to page</p> <p>22 ODDCIV-538414814 --</p> <p>23 (Telephone interruption.)</p> <p>24 Q. -- isn't it true that as</p> <p>25 reflected in item 437, JC Lim of PLDS called</p>	<p style="text-align: right;">Page 101</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 identification, as of this date.)</p> <p>3 A. (Document review.)</p> <p>4 Q. Ms. Huang, isn't it true that on</p> <p>5 the first page on the right-hand side of this</p> <p>6 AT&T telephone bill you see the phone number</p> <p>7 281-660-8363, which is the telephone number</p> <p>8 this bill and phone record refers to.</p> <p>9 Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. You are aware that JC Lim's cell</p> <p>15 phone number was 281-660-8363. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. Turning to page ODDCIV-5384263,</p> <p>21 isn't it true that these phone records list</p> <p>22 each phone call to JC Lim's phone including</p> <p>23 the date, time of call, phone number called,</p> <p>24 whether it was incoming or outgoing, and the</p> <p>25 minutes the phone call lasted for. Correct?</p>

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<p style="text-align: right;">Page 102</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Looking at the document</p> <p>7 Bates-numbered ODDCIV-5384263, Ms. Huang,</p> <p>8 isn't it true that as reflected in item 234,</p> <p>9 JC Lim of PLDS called you on July 25, 2008, at</p> <p>10 10:10 a.m. for two minutes?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Turning to the next page,</p> <p>16 ODDCIV-5384264, Ms. Huang, isn't it true that</p> <p>17 as reflected in item 237, JC Lim of PLDS</p> <p>18 received an incoming call from you on July 25,</p> <p>19 2008, at 11:05 a.m., and you spoke with him</p> <p>20 for six minutes?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Ms. Huang isn't it true that as</p>	<p style="text-align: right;">Page 104</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 4, 2008, to Haw Chen and Virginia Lin while</p> <p>3 you were employed by QSI in your ordinary</p> <p>4 course of business?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And in that e-mail, which is the</p> <p>10 second one on the first page, the first</p> <p>11 sentence you write is, "Base on info from</p> <p>12 PLDS."</p> <p>13 Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. And you wrote this because the</p> <p>19 information that follows is information that</p> <p>20 was provided to you directly from a PLDS</p> <p>21 employee. Correct?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 103</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 reflected in item 265, JC Lim of PLDS called</p> <p>3 you in Houston, Texas on July 31, 2008, at</p> <p>4 4:14 p.m., and you spoke with him for nine</p> <p>5 minutes?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Could the court</p> <p>11 reporter please mark Exhibit 439 and</p> <p>12 439-A, a document Bates number</p> <p>13 QUANTA_HAW_3403.</p> <p>14 (Plaintiffs' Exhibit 439, e-mail</p> <p>15 from Ya-Ping Huang to Haw Chen and</p> <p>16 Virginia Lin dated July 4, 2008,</p> <p>17 Bates-numbered QUANTA_HAW_3403, marked</p> <p>18 for identification, as of this date.)</p> <p>19 (Plaintiffs' Exhibit 439-A,</p> <p>20 English translation of Exhibit 439,</p> <p>21 marked for identification, as of this</p> <p>22 date.)</p> <p>23 A. (Document review.)</p> <p>24 Q. Ms. Huang, isn't it true that</p> <p>25 Exhibit 439 is an e-mail that you sent on July</p>	<p style="text-align: right;">Page 105</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. And when you write, "Base on info</p> <p>3 from PLDS," you are specifically referring to</p> <p>4 your phone call conversation that we looked at</p> <p>5 in Exhibit 437, item 360 on the page numbered</p> <p>6 ODDCIV-5384147, where JC Lim of PLDS called</p> <p>7 you at your number 832-661-1496 in Houston,</p> <p>8 Texas on July 1, 2008, at 4:33 p.m. for 11</p> <p>9 minutes. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. You then report to your</p> <p>15 colleagues the information you gained from JC</p> <p>16 Lim. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Haw Chen then instructed you to</p> <p>22 pass this information on to Sony's Amino</p> <p>23 Masafumi. Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>

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<p style="text-align: right;">Page 106</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And you followed Haw Chen's</p> <p>5 request and did provide to Sony the</p> <p>6 information that JC Lim provided to you on the</p> <p>7 phone. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Ms. Huang, isn't it true that one</p> <p>13 of the ways you and your competitors were able</p> <p>14 to slow pricing declines in the optical disk</p> <p>15 drive market was to agree and discuss the</p> <p>16 levels of aggressiveness that you intended to</p> <p>17 quote to specific customers?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And you and your competitors</p> <p>23 would inform each other whether you intended</p> <p>24 to be aggressive or not for a particular</p> <p>25 customer in order to signal to each other that</p>	<p style="text-align: right;">Page 108</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 for this portion RFQ."</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. Isn't it true that you knew that</p> <p>9 TSST did not intend to be aggressive for this</p> <p>10 portion of the RFQ because you communicated</p> <p>11 with TSST and they informed you that they did</p> <p>12 not intend to bid aggressively for this RFQ?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And reaching an understanding on</p> <p>18 levels of aggressiveness was one way QSI would</p> <p>19 reach agreement with its competitors.</p> <p>20 Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Ms. Huang, in December of 2008,</p>
<p style="text-align: right;">Page 107</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 you did not need to lower prices. Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 MS. SCARLETT: Could the court</p> <p>8 reporter please provide the witness with</p> <p>9 Exhibit 377, a document Bates number</p> <p>10 2321785.</p> <p>11 A. (Document review.)</p> <p>12 Q. Isn't it true that Exhibit 377 at</p> <p>13 page numbered 321786 is an e-mail that you</p> <p>14 sent on April 4, 2008, to Kitamura Satoshi,</p> <p>15 Steve Van Vorst, Amino Masafumi of Sony</p> <p>16 Optiarc, and Haw Chen of QSI, among others,</p> <p>17 while you were employed by QSI in the ordinary</p> <p>18 course of business?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And in this e-mail you report</p> <p>24 that, "We don't want to be aggressive for this</p> <p>25 run since TSST is not willing to be aggressive</p>	<p style="text-align: right;">Page 109</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 you became aware that Tango Lin, the person in</p> <p>3 charge of TSST's ODD business in Taiwan, was</p> <p>4 requesting that Evon Yu, who reported to you,</p> <p>5 have what he called, "Tea time talking."</p> <p>6 Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And you understood that Tango Lin</p> <p>12 wanted to engage in, "Free talking about the</p> <p>13 future of optical disk drive."</p> <p>14 Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And you were aware that Tango had</p> <p>20 sent this invitation out to several of QSI's</p> <p>21 competitors including Hitachi, Sony, Pioneer,</p> <p>22 Samsung, and TEAC. Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>

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<p style="text-align: right;">Page 110</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 MS. SCARLETT: Could the court</p> <p>4 reporter please mark for this deposition</p> <p>5 Exhibit 440, 440-A, a document</p> <p>6 Bates-numbered Q419089.</p> <p>7 (Plaintiffs' Exhibit 440, e-mail</p> <p>8 from Evon Yu to Ya-Ping Huang dated</p> <p>9 December 5, 2008, Bates-numbered</p> <p>10 Q419089, marked for identification, as</p> <p>11 of this date.)</p> <p>12 (Plaintiffs' Exhibit 440-A,</p> <p>13 English translation of Exhibit 440,</p> <p>14 marked for identification, as of this</p> <p>15 date.)</p> <p>16 A. (Document review.)</p> <p>17 Q. Ms. Huang, isn't it true that</p> <p>18 Exhibit 440 is an e-mail that you received on</p> <p>19 December 5, 2008, from Evon Yu, while you were</p> <p>20 employed by QSI in the ordinary course of your</p> <p>21 business?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 112</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Ms. Huang, isn't it true that</p> <p>3 Exhibit 27 is a series of e-mails that you</p> <p>4 sent and received on December 15, 2008, in the</p> <p>5 ordinary course of your business at QSI?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And this e-mail that you sent has</p> <p>11 the subject heading, "Meeting minutes with</p> <p>12 TSST Tango."</p> <p>13 Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 Q. After you met with Tango Lin, you</p> <p>19 reported to Haw Chen, Shu-ming Chen, and Evon</p> <p>20 Lu the important information that Tango</p> <p>21 provided to you regarding TSST's ODD business.</p> <p>22 Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 111</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. And you understood Tango Lin's</p> <p>3 request to have a tea time talking to mean</p> <p>4 that you would get together with him and share</p> <p>5 your respective companies' important</p> <p>6 competitively sensitive business information</p> <p>7 about the optical disk drive market. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And you, in fact, accepted Tango</p> <p>13 Lin's invitation for a "tea time talking" and</p> <p>14 met with him shortly after he invited you in</p> <p>15 December 2008. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 MS. SCARLETT: Could the court</p> <p>21 reporter please provide the witness with</p> <p>22 Exhibit 27 and 27-A, which were</p> <p>23 previously marked in the deposition of</p> <p>24 Bruce Jeong.</p> <p>25 A. (Document review.)</p>	<p style="text-align: right;">Page 113</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And as you report in your e-mail,</p> <p>4 Tango shared with you TSST's inventory levels.</p> <p>5 Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. And he shared with you that the</p> <p>11 market fund TSST was offering to ACER was not</p> <p>12 20 million but did not deny 6 million.</p> <p>13 Correct?</p> <p>14 MR. LAMBERT: Objection; form.</p> <p>15 A. On advice of my counsel, I invoke</p> <p>16 my Fifth Amendment rights under the US</p> <p>17 Constitution and decline to answer.</p> <p>18 MS. SONG: Sorry to interrupt,</p> <p>19 but I feel like one of the objections</p> <p>20 didn't get lodged in that, in the</p> <p>21 question just before this last one. Can</p> <p>22 we just check that. It's at 2308:55.</p> <p>23 THE COURT REPORTER: It's there.</p> <p>24 MS. SONG: Thank you.</p> <p>25 Q. Mr. Lin informed you about the</p>

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<p style="text-align: right;">Page 114</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 cost of TSST shipping and the shipment and</p> <p>3 demand for the HP account. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And he informed you that HLDS and</p> <p>9 TSST factories had stopped production for one</p> <p>10 month due to high inventory. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. The market fund for ACER that you</p> <p>16 and Tango discussed was the same market fund</p> <p>17 that you and Susie Peng of PLDS were instant</p> <p>18 messaging about on December 5, 2008, in</p> <p>19 Exhibit 409. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Ms. Huang, you and Bruce Jeong</p> <p>25 from HLDS would meet in person and exchange</p>	<p style="text-align: right;">Page 116</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Ms. Huang --</p> <p>3 THE COURT REPORTER: Can you hold</p> <p>4 on for one second. I am still looking</p> <p>5 for 30-A.</p> <p>6 MS. SCARLETT: I'm sorry.</p> <p>7 Actually, Patricia, you know</p> <p>8 what, my outline is wrong. There is</p> <p>9 only an Exhibit 30. There's not an</p> <p>10 Exhibit 30-A. I sent you on a futile</p> <p>11 mission. I'm sorry. My apologies.</p> <p>12 Q. Ms. Huang, isn't it true that</p> <p>13 Exhibit 30 is an e-mail that you sent on</p> <p>14 January 16, 2009, to Haw Chen, Wesley Cheng,</p> <p>15 and other QSI employees while you were</p> <p>16 employed by QSI in the ordinary course of your</p> <p>17 business?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. Isn't it true that when you</p> <p>24 write, "Some info from HLDS Bruce FYI," you</p> <p>25 were stating that the information listed below</p>
<p style="text-align: right;">Page 115</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 QSI and PLDS's specific customer pricing,</p> <p>3 shipment volume, pull rates from large OEMs,</p> <p>4 quoted prices to second tier ODMs, and exact</p> <p>5 pricing on specific accounts such as ACER and</p> <p>6 HP. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. After you received this -- after</p> <p>12 you received information from Bruce Jeong of</p> <p>13 HLDS, you would type up a report of your</p> <p>14 meeting and forward it to your supervisor Haw</p> <p>15 Chen and others who had input on pricing at</p> <p>16 QSI. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Could the court</p> <p>22 reporter please provide the witness with</p> <p>23 the Exhibits 30 and Exhibit 30-A,</p> <p>24 previously marked in the deposition of</p> <p>25 Bruce Jeong.</p>	<p style="text-align: right;">Page 117</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 is information that was provided to you</p> <p>3 directly from Bruce Jeong at HLDS?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And in this e-mail report to Haw</p> <p>9 Chen, you relay what Bruce Jeong told I about</p> <p>10 HLDS external slim DVD-RW shipment. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. In this e-mail report to Haw</p> <p>16 Chen, you relay what Bruce Jeong told you</p> <p>17 about HLDS shares of sales on the ACER account</p> <p>18 and the total available market on the ACER</p> <p>19 account. Correct?</p> <p>20 MR. LAMBERT: Objection to form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And in this e-mail report to Haw</p> <p>25 Chen, you relay what Bruce Jeong told you</p>

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<p style="text-align: right;">Page 118</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 about HLDS's pull rate for the HP account.</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And in this e-mail report to Haw</p> <p>9 Chen, you relay what Bruce Jeong told you that</p> <p>10 HLDS's price quote to second tier ODMs would</p> <p>11 be under \$24. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 Q. In this e-mail report to Haw Chen</p> <p>17 and others, you relay what Bruce Jeong told</p> <p>18 you about HLDS inventory levels. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. Ms. Huang, isn't it true that you</p> <p>24 also knew that other QSI employees who worked</p> <p>25 for you were having meetings with HLDS</p>	<p style="text-align: right;">Page 120</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 2008, from Caroline Lin while you were</p> <p>3 employed by QSI in the ordinary course of your</p> <p>4 business?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. And Ms. Lin writes in her e-mail</p> <p>10 to you, "Furthermore, I'll have dinner with</p> <p>11 HLDS Eugene this Friday evening and get the</p> <p>12 consensus on the price protection. I will</p> <p>13 call you up to discuss again this evening."</p> <p>14 Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And what Ms. Lin is telling you</p> <p>20 in this e-mail is that she's going to have</p> <p>21 dinner with Eugene Yang of HLDS and reach</p> <p>22 agreement on the price protection that will be</p> <p>23 offered to HP on future procurement event with</p> <p>24 HP. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 119</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 employees and exchanging competitively</p> <p>3 sensitive information?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You were aware that Caroline Lin</p> <p>9 and Eugene Yang of HLDS were meeting regularly</p> <p>10 to exchange price quotations, price protection</p> <p>11 for certain customer accounts, agreement not</p> <p>12 to price below certain price levels, and even</p> <p>13 the number of free samples that would be</p> <p>14 provided to customers. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 MS. SCARLETT: Could the court</p> <p>20 reporter please provide the witness with</p> <p>21 Exhibit 391, a document Bates number</p> <p>22 QUANTA_HAW_35744.</p> <p>23 A. (Document review.)</p> <p>24 Q. Isn't it true that Exhibit 391 is</p> <p>25 an e-mail that you received on October 16,</p>	<p style="text-align: right;">Page 121</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And the agreement that Caroline</p> <p>6 Lin was going to reach with HLDS was important</p> <p>7 enough that she felt it worthwhile to call you</p> <p>8 that night and share it with you. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 Q. And Ms. Lin did reach agreement</p> <p>11 with Eugene Yang of HLDS on the price</p> <p>12 protection with HP. Correct?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. You and Eugene Yang also</p> <p>18 exchanged the exact price your respective</p> <p>19 companies intended to quote to HP in their</p> <p>20 upcoming RFQ. Correct?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 MS. SCARLETT: Could the court</p>

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<p style="text-align: right;">Page 122</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 reporter please provide the witness with</p> <p>3 Exhibit 392 and 392-A, a document Bates</p> <p>4 number QUANTA_HAW_36740.</p> <p>5 A. (Document review.)</p> <p>6 Q. Turning to page 5 of this</p> <p>7 document, please, isn't it true that this is</p> <p>8 an e-mail you received on October 20, 2008,</p> <p>9 from Caroline Lin while you were employed by</p> <p>10 QSI in the ordinary course of your business?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. In this e-mail Ms. Lin writes,</p> <p>16 "Last week I met HLDS guy. According to what</p> <p>17 he said, their best price is around 24.65</p> <p>18 eventually. However, they don't want to go</p> <p>19 that far in the first round as well and might</p> <p>20 provide a higher price to see HP's feedback</p> <p>21 and then react."</p> <p>22 Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 124</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer?</p> <p>4 Q. During this HP procurement event,</p> <p>5 QSI continued to have contact with its</p> <p>6 competitors HLDS, PLDS, and TSST. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. You knew that Caroline Lin</p> <p>12 continued to communicate directly with her</p> <p>13 competitors and share QSI's anticipated price</p> <p>14 quote to HP. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And you knew that Caroline Lin</p> <p>20 continued to receive competitors' anticipated</p> <p>21 price quotes. Correct?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>
<p style="text-align: right;">Page 123</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. When Ms. Lin writes that she met</p> <p>5 with an HLDS guy last week, she's referring to</p> <p>6 the dinner meeting with Eugene Yang referenced</p> <p>7 in Exhibit 391. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. So not only did Caroline Lin and</p> <p>13 Eugene Yang reach an agreement on the price</p> <p>14 protection that would be offered, but they</p> <p>15 also exchanged the exact price that would be</p> <p>16 quoted to HP in the upcoming eRFQ. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. And based on the information that</p> <p>22 you learned about what HLDS was quoting, QSI</p> <p>23 made the decision to quote \$24.70. Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>	<p style="text-align: right;">Page 125</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Ultimately QSI, TSST, PLDS, and</p> <p>3 HLDS all agreed to protect price at a certain</p> <p>4 level and not quote between -- below 24.25.</p> <p>5 Correct?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 MS. SCARLETT: Could the court</p> <p>11 reporter please provide the witness with</p> <p>12 Exhibit 393, a document Bates-numbered</p> <p>13 QUANTA_HAW_21498.</p> <p>14 THE VIDEOGRAPHER: After this</p> <p>15 document we need to do a tape change.</p> <p>16 MS. SCARLETT: Do you want to do</p> <p>17 it now. I have about ten questions on</p> <p>18 this document.</p> <p>19 THE VIDEOGRAPHER: Yeah, you've</p> <p>20 got enough time.</p> <p>21 MS. SCARLETT: Okay. Great.</p> <p>22 MR. NEUMEYER: It's also 12:30</p> <p>23 here in Taiwan. I wonder maybe at that</p> <p>24 tape change we should take a lunch</p> <p>25 break.</p>

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<p style="text-align: right;">Page 126</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MS. SCARLETT: Sure, if you want</p> <p>3 to, we can -- I mean -- we can break. I</p> <p>4 don't actually have that many questions.</p> <p>5 So I don't know if you want to take a</p> <p>6 full lunch break or if you want to just</p> <p>7 take a shorter break and try to get</p> <p>8 through this quicker. It's up to you.</p> <p>9 Why don't we go through my next</p> <p>10 set of questions, and we can talk about</p> <p>11 it then.</p> <p>12 MR. NEUMEYER: Okay.</p> <p>13 Q. Isn't it true that Exhibit 393 is</p> <p>14 an e-mail that you received on October 16,</p> <p>15 2008, from Caroline while you were employed by</p> <p>16 QSI in the ordinary course of your business?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. On page 3 of Exhibit 393 Caroline</p> <p>22 Lin sends you an e-mail about the HP eRFQ</p> <p>23 event and the e-mail dated October 24, 2008.</p> <p>24 Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 128</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 quote a price lower than \$24.25. Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 Q. On the first page of the e-mail</p> <p>5 on October 24, 2008, you write to Haw Chen and</p> <p>6 Caroline Lin that you pushed Amino San of Sony</p> <p>7 "to quote 24.3 or 24.35."</p> <p>8 Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And you took the price</p> <p>14 information that Caroline provided and the</p> <p>15 agreement with the other suppliers and</p> <p>16 informed Sony of this. Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. You then pushed Sony to quote a</p> <p>22 price that was in line with the agreement with</p> <p>23 the other suppliers. Correct?</p> <p>24 MR. LAMBERT: Objection; form.</p> <p>25 A. On advice of my counsel, I invoke</p>
<p style="text-align: right;">Page 127</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And on October 24, 2008, Ms. Lin</p> <p>6 reports that QSI's key competitors in the</p> <p>7 event are PLDS, TSST, and HLDS. Correct?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. And in the e-mail where Caroline</p> <p>13 reports on what other competitors intend to</p> <p>14 quote to HP, she states, "In order to protect</p> <p>15 the price in certain levels, suppliers have</p> <p>16 the consensus to keep the price no lower than</p> <p>17 USD 24.25."</p> <p>18 Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And you understood this to mean</p> <p>24 that Caroline Lin had reached an agreement</p> <p>25 with her competitors on the HP account to not</p>	<p style="text-align: right;">Page 129</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 my Fifth Amendment rights under the US</p> <p>3 Constitution and decline to answer.</p> <p>4 Q. And QSI intended and did submit a</p> <p>5 bid in line with what it agreed with other</p> <p>6 suppliers. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Okay. That's the last of my</p> <p>13 questions on that exhibit. So we can go off</p> <p>14 the record?</p> <p>15 MR. LAMBERT: Before with he do,</p> <p>16 could you just check the record and make</p> <p>17 sure that last objection to form</p> <p>18 registered. I heard something on the</p> <p>19 audio. So did that last objection</p> <p>20 register?</p> <p>21 MS. SCARLETT: This is Shana, I'm</p> <p>22 looking at the LiveNote, and I see it</p> <p>23 twice.</p> <p>24 MR. LAMBERT: Thank you.</p> <p>25 THE VIDEOGRAPHER: All right.</p>

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<p style="text-align: right;">Page 130</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 The time is 12:40 p.m. This concludes</p> <p>3 Tape 3. We're going off the video</p> <p>4 record.</p> <p>5 (Lunch recess taken from</p> <p>6 12:40 p.m. to 1:43 p.m.)</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 132</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 MS. SCARLETT: I'd like to mark</p> <p>6 as Exhibit 442, document Bates-numbered</p> <p>7 HLDS_CIV31208.</p> <p>8 (Plaintiffs' Exhibit 442, cell</p> <p>9 phone records of Wu-jin Eugene Yang</p> <p>10 Bates-numbered HLDS_CIV31208, marked for</p> <p>11 identification, as of this date.)</p> <p>12 A. (Document review.)</p> <p>13 Q. Ms. Huang, these are the cell</p> <p>14 phone records of Wu-jin Eugene Yang that have</p> <p>15 been produced in this litigation.</p> <p>16 Isn't it true that on the first</p> <p>17 page of 442, these exhibits -- these phone</p> <p>18 records list each phone call to Eugene Yang's</p> <p>19 cell phone including the date, time of the</p> <p>20 call, the phone number called, whether it was</p> <p>21 incoming outgoing, and the minutes the phone</p> <p>22 call lasted for?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>
<p style="text-align: right;">Page 131</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A F T E R N O O N S E S S I O N</p> <p>3 (Time noted: 1:43 p.m.)</p> <p>4</p> <p>5 Y A - P I N G H U A N G, resumed and testified</p> <p>6 further through the interpreter as</p> <p>7 follows:</p> <p>8 THE VIDEOGRAPHER: The time now</p> <p>9 is 1:43 p.m. This begins Tape 4. We're</p> <p>10 back on the record with Ya-ping Huang.</p> <p>11 CONTINUED EXAMINATION</p> <p>12 BY MS. SCARLETT:</p> <p>13 Q. Good afternoon, Ms. Huang.</p> <p>14 Welcome back.</p> <p>15 Ms. Huang, isn't it true that</p> <p>16 during 2008 while you were in Houston, Texas</p> <p>17 you repeatedly communicated with Eugene Yang</p> <p>18 an employee of HLDS?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And isn't it true that Mr. Yang's</p> <p>24 cell phone number was 832-651-4367?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 133</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. Ms. Huang, turning to page</p> <p>4 HLDS_CIV31301, please. Isn't it true that as</p> <p>5 reflected in item 311, Eugene Yang of HLDS</p> <p>6 contacted you on June 3, 2008, at 8:34 p.m.</p> <p>7 for one minute?</p> <p>8 MR. LAMBERT: Objection; form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. Turning to page HLDS_CIV31304.</p> <p>13 Isn't it true that as reflected in item 117,</p> <p>14 Eugene Yang of HLDS contacted you on June 20,</p> <p>15 2008, at 1 p.m., and you spoke with him for 11</p> <p>16 minutes?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 Q. Turning to page HLDS_CIV31305,</p> <p>22 isn't it true that as reflected in item 144</p> <p>23 Eugene Yang of HLDS received an incoming call</p> <p>24 from you on June 23, 2008, at 8:30 p.m., and</p> <p>25 you spoke with him for 17 minutes?</p>

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<p style="text-align: right;">Page 134</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. Isn't it true that as reflected</p> <p>7 in item 150, Eugene Yang of HLDS contacted you</p> <p>8 on June 24, 2008, at 1:35 p.m., and you spoke</p> <p>9 with him for six minutes?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Isn't it true that as reflected</p> <p>15 in item 161, Eugene Yang of HLDS received an</p> <p>16 incoming call from you on June 24, 2008, at</p> <p>17 9:45 p.m., and you spoke with him for three</p> <p>18 minutes?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. Isn't it true that as reflected</p> <p>24 in item 162, Eugene Yang of HLDS contacted you</p> <p>25 on June 24, 2008, at 9:50 p.m. for eight</p>	<p style="text-align: right;">Page 136</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 not have to compete and lower your price when</p> <p>3 quoting to HP. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. In fact, you even asked Haw Chen</p> <p>9 to contact Pioneer and work out an agreement</p> <p>10 with Pioneer to not be aggressive in how they</p> <p>11 quoted to HP. Correct?</p> <p>12 MR. LAMBERT: Objection; form.</p> <p>13 A. On advice of my counsel, I invoke</p> <p>14 my Fifth Amendment rights under the US</p> <p>15 Constitution and decline to answer.</p> <p>16 MS. SCARLETT: Could the court</p> <p>17 reporter please provide the witness with</p> <p>18 Exhibit 418 and 418-A, a document Bates</p> <p>19 number QUANTA_HAW_51033.</p> <p>20 A. (Document review.)</p> <p>21 Q. Isn't it true that Exhibit 418 is</p> <p>22 a copy of an e-mail that you sent on October</p> <p>23 16, 2008, to Haw Chen, Caroline Lin, and other</p> <p>24 QSI employees while you were employed by QSI</p> <p>25 in the ordinary course of your business?</p>
<p style="text-align: right;">Page 135</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 minutes?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. Turning to page HLDS_CIV31307,</p> <p>8 isn't it true that item number 1 shows Eugene</p> <p>9 Yang received an incoming SMS text message</p> <p>10 from you on June 18 at 8:35 a.m.?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. Ms. Huang, you were aware that</p> <p>16 your supervisor Haw Chen had contacted and was</p> <p>17 communicating with employees at your</p> <p>18 competitor Pioneer. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And you were aware of the fact</p> <p>24 that Haw Chen could contact Pioneer and reach</p> <p>25 agreement with them on price so that you would</p>	<p style="text-align: right;">Page 137</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 MR. LAMBERT: Objection; form.</p> <p>3 A. On advice of my counsel, I invoke</p> <p>4 my Fifth Amendment rights under the US</p> <p>5 Constitution and decline to answer.</p> <p>6 Q. And you write in the e-mail,</p> <p>7 "Dear Haw, can you work out some agreement</p> <p>8 with Pioneer not to be too extreme. They only</p> <p>9 have approximately 400K left. No reason for</p> <p>10 them to fight for third place. Right?"</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And in this e-mail, you are</p> <p>16 requesting your supervisor Haw Chen to</p> <p>17 directly contact Pioneer and work out an</p> <p>18 agreement on what price to quote HP in the</p> <p>19 upcoming RFK. Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. Ms. Huang, QSI and Sony Optiarc</p> <p>25 would sometimes quote as one entity to</p>

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<p style="text-align: right;">Page 138</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 customers who were purchasing optical disk</p> <p>3 drives. Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. And other times QSI and Sony</p> <p>9 Optiarc would quote a price as separate</p> <p>10 entities to customers. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. QSI and Sony Optiarc would not</p> <p>16 inform the companies that they were quoting to</p> <p>17 separately that they were sharing pricing</p> <p>18 information before quoting to the customer.</p> <p>19 Correct?</p> <p>20 MR. LAMBERT: Objection; form.</p> <p>21 A. On advice of my counsel, I invoke</p> <p>22 my Fifth Amendment rights under the US</p> <p>23 Constitution and decline to answer.</p> <p>24 Q. And QSI and Sony Optiarc would</p> <p>25 share with each other their respective</p>	<p style="text-align: right;">Page 140</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 date.)</p> <p>3 A. (Document review.)</p> <p>4 Q. Ms. Huang, isn't it true that</p> <p>5 Exhibit 443 is a series of e-mails that you</p> <p>6 sent and received on January 13 and 14, 2009,</p> <p>7 to and from Haw Chen of QSI while you were</p> <p>8 employed by QSI in the ordinary course of</p> <p>9 business?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. Turning to the second page of the</p> <p>15 document, you write an e-mail to Haw Chen</p> <p>16 about Sony China's visit to QSI on January 13,</p> <p>17 2009. Correct?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. In that e-mail report to your</p> <p>23 supervisor Haw Chen you relate the information</p> <p>24 that Sony China has provided to you. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 139</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 companies' future pricing. Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. QSI and Sony would also share</p> <p>8 with each other information they learned about</p> <p>9 other competitor companies. Correct?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 MS. SCARLETT: Could the court</p> <p>15 reporter please mark Exhibit 443 and</p> <p>16 443-A, document Bates-numbered</p> <p>17 QUANTA_HAW_40513.</p> <p>18 (Plaintiffs' Exhibit 443, series</p> <p>19 of e-mails between Haw Chen and Ya-ping</p> <p>20 Huang dated January 13 and 14, 2009,</p> <p>21 Bates-numbered QUANTA_HAW_40513, marked</p> <p>22 for identification, as of this date.)</p> <p>23 (Plaintiffs' Exhibit 443-A,</p> <p>24 English translation of Exhibit 443,</p> <p>25 marked for identification, as of this</p>	<p style="text-align: right;">Page 141</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. In your e-mail you report that</p> <p>6 Sony China informed you QSI the exact price</p> <p>7 that Samsung was quoting for the PATA combo</p> <p>8 optical disk drive. Correct?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. And you report that Sony China</p> <p>14 informed you that TSST has around 100K PATA</p> <p>15 combo in inventory. Correct?</p> <p>16 MR. LAMBERT: Objection; form.</p> <p>17 A. On advice of my counsel, I invoke</p> <p>18 my Fifth Amendment rights under the US</p> <p>19 Constitution and decline to answer.</p> <p>20 Q. And in this document, "PCC"</p> <p>21 refers to Panasonic. Correct?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>

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<p style="text-align: right;">Page 142</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. And you report on HLDS and</p> <p>3 Panasonic quality issue and current inventory</p> <p>4 for the 9.5 millimeter ODD. Correct?</p> <p>5 MR. LAMBERT: Objection; form.</p> <p>6 A. On advice of my counsel, I invoke</p> <p>7 my Fifth Amendment rights under the US</p> <p>8 Constitution and decline to answer.</p> <p>9 Q. Not only did you and your fellow</p> <p>10 employees exchange confidential business</p> <p>11 information with competitors such as price,</p> <p>12 volume, production, price protection, and</p> <p>13 participation in procurement events, but you</p> <p>14 also reached agreement on the number of free</p> <p>15 samples you would provide to customers.</p> <p>16 Correct?</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Could the court</p> <p>22 reporter please provide the witness with</p> <p>23 Exhibit 425 and 425-A, a document</p> <p>24 Bates-numbered QUANTA_HAW_56465.</p> <p>25 A. (Document review.)</p>	<p style="text-align: right;">Page 144</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Constitution and decline to answer.</p> <p>3 Q. And Ms. Lin also states that</p> <p>4 according to HLDS, every ODD supplier</p> <p>5 will accept a maximum free sample quantity</p> <p>6 from zero to 20. Correct?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And you understood "T" to refer</p> <p>12 to TSST. Correct?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. And you understood "H" to refer</p> <p>18 to HLDS. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And you understood "P" to be</p> <p>24 PLDS. Correct?</p> <p>25 MR. LAMBERT: Objection; form.</p>
<p style="text-align: right;">Page 143</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. Isn't it true that Exhibit 425 is</p> <p>3 an e-mail that you received on February 23,</p> <p>4 2009, from Caroline Lin while you were</p> <p>5 employed by QSI in the ordinary course of your</p> <p>6 business?</p> <p>7 MR. LAMBERT: Objection; form.</p> <p>8 A. On advice of my counsel, I invoke</p> <p>9 my Fifth Amendment rights under the US</p> <p>10 Constitution and decline to answer.</p> <p>11 Q. And in this e-mail Caroline Lin</p> <p>12 writes to you and other QSI employees and</p> <p>13 informs you that she met with HLDS last</p> <p>14 Friday. Correct?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. And Ms. Lin states that according</p> <p>20 to HLDS, "T, H, and P have temporarily reached</p> <p>21 a consensus, will not compromise."</p> <p>22 Correct?</p> <p>23 MR. LAMBERT: Objection; form.</p> <p>24 A. On advice of my counsel, I invoke</p> <p>25 my Fifth Amendment rights under the US</p>	<p style="text-align: right;">Page 145</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. And you understood from this</p> <p>6 e-mail that Caroline Lin had met with Eugene</p> <p>7 Yang of HLDS, and Eugene Yang had communicated</p> <p>8 that a consensus had been reached between</p> <p>9 HLDS, TSST, and PLDS to only provide a maximum</p> <p>10 of 20 free samples to HP. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And wrote -- when Ms. Lin wrote</p> <p>16 that these companies had reached a consensus,</p> <p>17 you understood her to mean that the companies</p> <p>18 had reached an agreement. Correct?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. And when Ms. Lin wrote,</p> <p>24 "Therefore, I will currently still offer 15 to</p> <p>25 20 pieces," that she intended to abide by the</p>

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<p style="text-align: right;">Page 146</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 agreement reached with the other suppliers.</p> <p>3 Correct?</p> <p>4 MR. LAMBERT: Objection; form.</p> <p>5 A. On advice of my counsel, I invoke</p> <p>6 my Fifth Amendment rights under the US</p> <p>7 Constitution and decline to answer.</p> <p>8 Q. You understood that when QSI</p> <p>9 provided a price to HP, that it was one price</p> <p>10 for worldwide sales. Correct?</p> <p>11 MR. LAMBERT: Objection; form.</p> <p>12 A. On advice of my counsel, I invoke</p> <p>13 my Fifth Amendment rights under the US</p> <p>14 Constitution and decline to answer.</p> <p>15 Q. And you understood that when QSI</p> <p>16 provided a price to Dell, that it was one</p> <p>17 price for worldwide sales?</p> <p>18 MR. LAMBERT: Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. And you understood that</p> <p>23 regardless of what kind of procurement method</p> <p>24 your customer was using, that they were</p> <p>25 interested in receiving the lowest price.</p>	<p style="text-align: right;">Page 148</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Beko Reblitz-Richardson, counsel for the</p> <p>3 Sony defendants. I have a few</p> <p>4 questions.</p> <p>5 EXAMINATION BY</p> <p>6 MR. REBLITZ-RICHARDSON:</p> <p>7 Q. Ms. Huang, since 2004 have you</p> <p>8 ever been employed by Sony Optiarc, Inc.?</p> <p>9 MR. LAMBERT: Objection; form.</p> <p>10 A. On advice of my counsel, I invoke</p> <p>11 my Fifth Amendment rights under the US</p> <p>12 Constitution and decline to answer.</p> <p>13 Q. Since 2004 have you ever been</p> <p>14 employed by Sony Optiarc America, Inc.?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. Since 2004 have you ever been</p> <p>20 employed by Sony Electronics, Inc.?</p> <p>21 MR. LAMBERT: Objection; form.</p> <p>22 A. On advice of my counsel, I invoke</p> <p>23 my Fifth Amendment rights under the US</p> <p>24 Constitution and decline to answer.</p> <p>25 Q. Since 2004 have you ever been</p>
<p style="text-align: right;">Page 147</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Correct?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. [REDACTED]</p> <p>8 [REDACTED]</p> <p>9 [REDACTED]</p> <p>10 [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED]</p> <p>13 [REDACTED]</p> <p>14 [REDACTED]</p> <p>15 [REDACTED]</p> <p>16 [REDACTED]</p> <p>17 MR. LAMBERT: Objection; form.</p> <p>18 A. On advice of my counsel, I invoke</p> <p>19 my Fifth Amendment rights under the US</p> <p>20 Constitution and decline to answer.</p> <p>21 MS. SCARLETT: Thank you very</p> <p>22 much, Ms. Huang. That's all the</p> <p>23 questions that plaintiffs have for you</p> <p>24 at this time.</p> <p>25 MR. REBLITZ-RICHARDSON: This is</p>	<p style="text-align: right;">Page 149</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 employed by Sony Corporation?</p> <p>3 MR. LAMBERT: Objection; form.</p> <p>4 A. On advice of my counsel, I invoke</p> <p>5 my Fifth Amendment rights under the US</p> <p>6 Constitution and decline to answer.</p> <p>7 Q. In your experience, did prices</p> <p>8 for CD-ROM drives decline during the 2004 to</p> <p>9 2009 time period?</p> <p>10 MR. LAMBERT: Objection; form.</p> <p>11 A. On advice of my counsel, I invoke</p> <p>12 my Fifth Amendment rights under the US</p> <p>13 Constitution and decline to answer.</p> <p>14 Q. In your experience, did prices</p> <p>15 for DVD-ROM drives decline during the 2004 to</p> <p>16 2009 time period?</p> <p>17 MR. LAMBERT: Objection.</p> <p>18 Objection; form.</p> <p>19 A. On advice of my counsel, I invoke</p> <p>20 my Fifth Amendment rights under the US</p> <p>21 Constitution and decline to answer.</p> <p>22 Q. In your experience, did prices</p> <p>23 for DVD-RW drives decline during the 2004 to</p> <p>24 2009 time period?</p> <p>25 MR. LAMBERT: Objection; form.</p>

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<p style="text-align: right;">Page 150</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. In your experience, did prices</p> <p>6 for combo drives decline during the 2004 to</p> <p>7 2009 time period?</p> <p>8 MR. LAMBERT: Objection to form.</p> <p>9 A. On advice of my counsel, I invoke</p> <p>10 my Fifth Amendment rights under the US</p> <p>11 Constitution and decline to answer.</p> <p>12 Q. In your experience, did prices</p> <p>13 for Blu-Ray drives decline during the 2004 to</p> <p>14 2009 time period?</p> <p>15 MR. LAMBERT: Objection; form.</p> <p>16 A. On advice of my counsel, I invoke</p> <p>17 my Fifth Amendment rights under the US</p> <p>18 Constitution and decline to answer.</p> <p>19 Q. During the 2004 through 2009 time</p> <p>20 period, did you personally participate in any</p> <p>21 HP ODD procurement events?</p> <p>22 MR. LAMBERT: Objection; form.</p> <p>23 A. On advice of my counsel, I invoke</p> <p>24 my Fifth Amendment rights under the US</p> <p>25 Constitution and decline to answer.</p>	<p style="text-align: right;">Page 152</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 A. On advice of my counsel, I invoke</p> <p>3 my Fifth Amendment rights under the US</p> <p>4 Constitution and decline to answer.</p> <p>5 Q. Ive additional questions, but in</p> <p>6 light of the answers today, I won't ask any</p> <p>7 further questions today.</p> <p>8 MR. LAMBERT: This is Kurt</p> <p>9 Lambert for Quanta, if there are no</p> <p>10 further questions, Quanta designates the</p> <p>11 deposition transcripts of Haw Chen,</p> <p>12 Shu-ming Tzeng, and Sally Huang as</p> <p>13 confidential restricted pursuant to the</p> <p>14 stipulated protective order. The</p> <p>15 deposition dates are November 18,</p> <p>16 November 20, and November 21</p> <p>17 respectively.</p> <p>18 In addition, documents bearing a</p> <p>19 Quanta Haw Bates prefix do not appear to</p> <p>20 have any confidential stamps. Quanta</p> <p>21 designates all such documents as</p> <p>22 confidential restricted pursuant to the</p> <p>23 stipulated protective order.</p> <p>24 THE COURT REPORTER: This is the</p> <p>25 court reporter. Could I ask you to</p>
<p style="text-align: right;">Page 151</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 Q. During the 2004 through 2009 time</p> <p>3 period, what role, if any, did you have in</p> <p>4 connection with determining ODD prices quoted</p> <p>5 to HP?</p> <p>6 MR. LAMBERT: Objection; form.</p> <p>7 A. On advice of my counsel, I invoke</p> <p>8 my Fifth Amendment rights under the US</p> <p>9 Constitution and decline to answer.</p> <p>10 Q. During the 2004 through 2009 time</p> <p>11 period, did you communicate with any HP</p> <p>12 employees?</p> <p>13 MR. LAMBERT: Objection; form.</p> <p>14 A. On advice of my counsel, I invoke</p> <p>15 my Fifth Amendment rights under the US</p> <p>16 Constitution and decline to answer.</p> <p>17 Q. Do you know someone named Andrew</p> <p>18 Chu?</p> <p>19 MR. LAMBERT: Objection; form.</p> <p>20 A. On advice of my counsel, I invoke</p> <p>21 my Fifth Amendment rights under the US</p> <p>22 Constitution and decline to answer.</p> <p>23 Q. Is it your understanding that</p> <p>24 Andrew Chu at some point worked for HP?</p> <p>25 MR. LAMBERT: Objection; form.</p>	<p style="text-align: right;">Page 153</p> <p>1 Y. Huang - Confidential Restricted</p> <p>2 state your orders for the transcript on</p> <p>3 the record, please.</p> <p>4 MR. LAMBERT: This is Curt</p> <p>5 lambert for Quanta. Same order we</p> <p>6 placed for the deposition transcripts of</p> <p>7 Haw Chen and Shu-ming sing.</p> <p>8 MS. SCARLETT: This is Shana</p> <p>9 Scarlett from Hagens Berman. We just</p> <p>10 would like a regular transcript. We</p> <p>11 don't need it expedited or a rough.</p> <p>12 Thank you.</p> <p>13 MS. CHILDERS: This is Katie</p> <p>14 Childers for Dell, Inc. and Dell</p> <p>15 products. Same please.</p> <p>16 MS. WILSON: This is Hannah</p> <p>17 Wilson for Hitachi Limited. We'll have</p> <p>18 the same order for the previous two</p> <p>19 nights, which I think is just an</p> <p>20 electronic transcript. So it does not</p> <p>21 need to be expedited.</p> <p>22 THE VIDEOGRAPHER: Anybody else?</p> <p>23 Done?</p> <p>24 MS. SONG: Same for Stephanie</p> <p>25 Song from Latham Watkins.</p>

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<div>Page 154</div> <div><div>1</div><div>Y. Huang - Confidential Restricted</div><div>2</div><div>THE VIDEOGRAPHER: We can go off?</div><div>3</div><div>MR. LAMBERT: Sure.</div><div>4</div><div>MR. NEUMEYER: Thank you.</div><div>5</div><div>THE VIDEOGRAPHER: The time now</div><div>6</div><div>is 2:22 p.m. This concludes Tape 4 of 4</div><div>7</div><div>of today's deposition of Ya-ping Huang.</div><div>8</div><div>We're off the video record.</div><div>9</div><div>(Time noted: 2:22 p.m.)</div><div>10</div><div>11</div><div>12</div><div>13</div><div>14</div><div>15</div><div>16</div><div>17</div><div>18</div><div>19</div><div>20</div><div>21</div><div>22</div><div>23</div><div>24</div><div>25</div></div>	<div>Page 156</div> <div><div>1</div><div>Y. Huang - Confidential Restricted</div><div>2</div><div>C E R T I F I C A T E</div><div>3</div><div>STATE OF NEW YORK)</div><div>5</div><div>: ss.</div><div>6</div><div>COUNTY OF NASSAU)</div><div>7</div><div>I, PATRICIA A. BIDONDE, a Notary</div><div>9</div><div>Public within and for the State of New</div><div>10</div><div>York, do hereby certify:</div><div>11</div><div>That Ya-ping Huang, the witness</div><div>12</div><div>whose deposition is hereinbefore set</div><div>13</div><div>forth, was duly sworn by me and that</div><div>14</div><div>such deposition is a true record of the</div><div>15</div><div>testimony given by the witness.</div><div>16</div><div>I further certify that I am not</div><div>17</div><div>related to any of the parties to this</div><div>18</div><div>action by blood or marriage, and that I</div><div>19</div><div>am in no way interested in the outcome</div><div>20</div><div>of this matter.</div><div>21</div><div>IN WITNESS WHEREOF, I have</div><div>22</div><div>hereunto set my hand this day,</div><div>23</div><div>November 27, 2013.</div><div>24</div><div>PATRICIA A. BIDONDE, RPR</div><div>25</div></div>
<div>Page 155</div> <div><div>1</div><div>Y. Huang - Confidential Restricted</div><div>2</div><div>A C K N O W L E D G M E N T</div><div>3</div><div>STATE OF)</div><div>5</div><div>: ss</div><div>6</div><div>COUNTY OF)</div><div>7</div><div>I, Ya-ping Huang hereby certify</div><div>9</div><div>that I have read the transcript of my</div><div>10</div><div>testimony taken under oath in my</div><div>11</div><div>deposition of November 21, 2013; that</div><div>12</div><div>the transcript is a true, complete and</div><div>13</div><div>correct record of my testimony, and that</div><div>14</div><div>the answers on the record as given by me</div><div>15</div><div>are true and correct.</div><div>16</div><div>Ya-ping Huang</div><div>18</div><div>Signed and subscribed to</div><div>21</div><div>before me this</div><div>22</div><div>day of , 2013.</div><div>23</div><div>Notary Public</div><div>24</div><div>25</div></div>	<div>Page 157</div> <div><div>1</div><div>Y. Huang - Confidential Restricted</div><div>2</div><div>I N D E X</div><div>3</div><div>ExaminationsPage</div><div>3</div><div>MS. SCARLETT11</div><div>4</div><div>MR. REBLITZ-RICHARDSON148</div><div>5</div><div>E X H I B I T S</div><div>6</div><div>Plaintiffs'PageLine</div><div>7</div><div>Exhibit 434Copy of LinkedIn profile</div><div>8</div><div>web page for Sally Huang...2025</div><div>9</div><div>Exhibit 435E-Mail from Evon Yu to</div><div>10</div><div>Ya-Ping Huang dated</div><div>11</div><div>November 6, 2009,</div><div>12</div><div>Bates-numbered Q446228.....5413</div><div>13</div><div>Exhibit 436Document Bates-numbered</div><div>14</div><div>ODDCIV-105746.....7021</div><div>15</div><div>Exhibit 437Document Bates-numbered</div><div>16</div><div>ODDCIV-5384136.....9521</div><div>17</div><div>Exhibit 438AT&T telephone bill and</div><div>18</div><div>phone record for</div><div>19</div><div>281-660-8363,</div><div>20</div><div>Bates-numbered</div><div>21</div><div>ODDCIV-5384261.....10022</div><div>22</div><div>23</div><div>24</div><div>25</div></div>

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1 Y. Huang - Confidential Restricted

2 C E R T I F I C A T E

3

4 STATE OF NEW YORK)

5 : ss.

6 COUNTY OF NASSAU)

7

8 I, PATRICIA A. BIDONDE, a Notary

9 Public within and for the State of New

10 York, do hereby certify:

11 That Ya-ping Huang, the witness
12 whose deposition is hereinbefore set
13 forth, was duly sworn by me and that
14 such deposition is a true record of the
15 testimony given by the witness.

16 I further certify that I am not
17 related to any of the parties to this
18 action by blood or marriage, and that I
19 am in no way interested in the outcome
20 of this matter.

21 IN WITNESS WHEREOF, I have
22 hereunto set my hand this day,
23 November 27, 2013.

24 P. Bidonde

25 PATRICIA A. BIDONDE, RPR

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1	Y. Huang - Confidential Restricted			1	Y. Huang - Confidential Restricted		
2	E X H I B I T S			2	INDEX OF REFERENCED EXHIBITS		
3	Plaintiffs' Page Line			3	Plaintiffs' Page Line		
4	Exhibit 439 E-Mail from Ya-Ping Huang			4	Exhibit 359 Document Bates number		
5	to Haw Chen and Virginia			5	Q86434.....25 6		
6	Lin dated July 4, 2008,			6	Exhibit 371 Document Bates-numbered		
7	Bates-numbered			7	QUANTA_HAW_47154.....59 21		
8	QUANTA_HAW_3403..... 103 14			8	Exhibit 412 Document Bates number		
9	Exhibit 439-A English translation of			9	QUANTA_HAW-2376.....65 8		
10	Exhibit 439..... 103 20			10	Exhibit 410 Bates number		
11	Exhibit 440 E-mail from Evon Yu to			11	QUANTA_HAW_68974.....73 9		
12	Ya-Ping Huang dated			12	Exhibit 409 Document Bates-numbered		
13	December 5, 2008,			13	QUANTA_HAW_45535.....76 14		
14	Bates-numbered Q419089..... 110 7			14	Exhibit 406 Document Bates number		
15	Exhibit 440-A English translation of			15	37747.....79 2		
16	Exhibit 440..... 110 13			16	Exhibit 405 Document Bates-numbered		
17	Exhibit 442 Cell phone records of			17	QUANTA_HAW_43019.....82 15		
18	Wu-jin Eugene Yang			18	Exhibit 398 Document Bates-numbered		
19	Bates-numbered			19	QUANTA_HAW_47029.....88 19		
20	HLDS_CIV31208..... 132 8			20	Exhibit 364 Document Bates-numbered		
21				21	QUANTA_HAW-61411.....92 18		
22				22	Exhibit 377 Document Bates number		
23				23	2321785.....107 9		
24				24			
25				25			

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1	Y. Huang - Confidential Restricted			1	Y. Huang - Confidential Restricted		
2	E X H I B I T S			2	INDEX OF REFERENCED EXHIBITS (CONT'D)		
3	Plaintiffs' Page Line			3	Plaintiffs' Page Line		
4	Exhibit 443 Series of e-mails between			4	Exhibit 27 Series of e-mails dated		
5	Haw Chen and Ya-Ping			5	December 15, 2008.....112 3		
6	Huang dated January 13			6	Exhibits 30 E-mail dated January 16,		
7	and 14, 2009,			7	2009, to Haw Chen, Wesley		
8	Bates-numbered			8	Cheng, and other.....116 13		
9	QUANTA_HAW_40513..... 139 18			9	Exhibit 391 Document Bates number		
10	Exhibit 443-A English translation of			10	QUANTA_HAW_35744.....119 21		
11	Exhibit 443..... 139 24			11	Exhibit 392 Document Bates number		
12				12	QUANTA_HAW_36740.....122 3		
13				13	Exhibit 393 Document Bates-numbered		
14				14	QUANTA_HAW_21498.....125 12		
15				15	Exhibit 418 Document Bates number		
16				16	QUANTA_HAW_51033.....136 18		
17				17	Exhibit 425 Document Bates-numbered		
18				18	QUANTA_HAW_56465.....142 23		
19				19			
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21				21			
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25				25			

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1 Y. Huang - Confidential Restricted
 2 ERRATA SHEET FOR THE TRANSCRIPT OF:
 3 Case Name: IN RE OPTICAL DISK DRIVE PRODUCTS
 4 Dep Date: November 21, 2013
 5 Deponent: Ya-ping Huang

6 Pg. Ln. Now Reads Should Read Reason

7 _____
 8 _____
 9 _____
 10 _____
 11 _____
 12 _____
 13 _____
 14 _____
 15 _____
 16 _____
 17 _____
 18 _____

19 _____
 20 _____
 21 _____
 22 Signature of Deponent

23 Signed and subscribed to before me
 24 this ____ day of _____, 2013

25 _____
 Notary Public

42 (Page 162)

EXHIBIT 4

From: Shana Scarlett [<mailto:shanas@hbsslw.com>]
Sent: Thursday, June 02, 2016 5:06 PM
To: Paul Hanna; aje@mmker.com
Cc: Ganske, Rod (Rod.Ganske@alston.com); Tuck, Andy; Jeff Friedman
Subject: RE: ODD - Request for Discovery Conference

Counsel,

Based on our conversation on May 23rd, we expected the production of Quanta's remaining custodial documents last week. Could you give us an update on when we can expect these documents?

As well, we are still waiting for deposition dates for Caroline Lin, Haw Chen, Shu-Ming Tzeng and Sally Huang.

Thanks, Shana

Shana Scarlett | **Hagens Berman Sobol Shapiro LLP** | Direct: (510) 725-3032

From: Shana Scarlett
Sent: Monday, May 23, 2016 10:12 AM
To: 'pxh@manningllp.com'; 'aje@mmker.com'
Cc: Ganske, Rod (Rod.Ganske@alston.com); 'Tuck, Andy'; Jeff Friedman (jefff@hbsslw.com)
Subject: RE: ODD - Request for Discovery Conference

Counsel,

Having not heard from you, this is to notify you that IPPs intend to move to compel / for an order to show cause before the discovery magistrate assigned to this case. We will be filing our motion on May 26, 2016th with an explanation that Quanta has declined to participate in discovery conferences in this matter.

Thanks, Shana

Shana Scarlett | **Hagens Berman Sobol Shapiro LLP** | Direct: (510) 725-3032

From: Shana Scarlett
Sent: Thursday, May 19, 2016 9:16 AM
To: 'pxh@manningllp.com'; 'aje@mmker.com'
Cc: Ganske, Rod (Rod.Ganske@alston.com); 'Tuck, Andy'; Jeff Friedman (jefff@hbsslw.com)
Subject: ODD - Request for Discovery Conference

Counsel,

We have not received a response regarding our request below. Again, IPPs request an immediate discovery conference to address Quanta's delinquent discovery obligations. Failing any response, IPPs will be filing a motion to compel responses before Chief Magistrate Judge Spero with a short explanation that Quanta has refused to respond to our repeated requests for a conference.

Plaintiffs are available on Monday, May 23rd at 11am PT for a discovery conference. Please let us know if you are available. If you do not respond, IPPs intend to file a motion to compel within five days of this notice, on May 26, 2016.

Thanks, Shana

Shana Scarlett | **Hagens Berman Sobol Shapiro LLP** | Direct: (510) 725-3032

From: Shana Scarlett
Sent: Friday, May 13, 2016 2:20 PM
To: 'pxh@manningllp.com'; 'aje@mmker.com'
Cc: Ganske, Rod (Rod.Ganske@alston.com); 'Tuck, Andy'
Subject: FW: In re Optical Disk Drive Antitrust Litig., No. 10-md-2143 RS (N.D. Cal.) Shana Scarlett Letter re Meet and Confer Summary

Paul and Anthony,

I represent the indirect purchaser plaintiffs in the In re Optical Disk Drive litigation. We write regarding several deficiencies from Quanta in the litigation, and given the withdrawal of Drinker Biddle from this litigation.

The Quanta defendants had agreed to produce documents from the remaining custodians by April 30, 2016. We have not yet received this production. See attached letter dated march 23, 2016, confirming my conversation with Curt Lambert.

Could you please provide a time early next week when we can discuss the status of the document production?

Shana Scarlett | **Hagens Berman Sobol Shapiro LLP** | Direct: (510) 725-3032

From: Jeaneth Decena
Sent: Wednesday, March 23, 2016 11:29 AM
To: curt.lambert@dbi.com
Cc: rod.ganske@alston.com; andy.tuck@alston.com; keith.walter@dbi.com; Jeff Friedman; Shana Scarlett
Subject: In re Optical Disk Drive Antitrust Litig., No. 10-md-2143 RS (N.D. Cal.) Shana Scarlett Letter re Meet and Confer Summary

Counsel,

Attached please find a letter from Shana E. Scarlett.

Thank you.

Jeaneth Decena | Paralegal
Hagens Berman Sobol Shapiro LLP
715 Hearst Ave, Suite 202 - Berkeley, CA 94710

Direct: (510) 725-3041

jeanethd@hbsslaw.com | www.hbsslaw.com

Named to [**2015 Plaintiff's Hot List**](#) by *The National Law Journal*

EXHIBIT 5

Shana Scarlett

From: Colleen Cleary
Sent: Thursday, November 03, 2016 3:07 PM
To: Paul Hanna
Cc: Alejandro Caraveo; Jeff Friedman; Shana Scarlett; Brian Miller
Subject: RE: ODD - Request for discovery conference

Paul,

IPPs have not yet received proposed deposition dates for Caroline Lin, Haw Chen and Shu-Ming Tseng. Please send Quanta's proposed deposition dates for these witnesses to IPPs by C.O.B. PT today (November 3, 2016).

Thank you, Colleen

Colleen Cleary | Associate
Hagens Berman Sobol Shapiro LLP
715 Hearst Ave, Suite 202 - Berkeley, CA 94710
Direct: (510) 725-3042
colleenc@hbsslaw.com | www.hbsslaw.com



Named to [2016 Elite Trial Lawyer List](#) by *The National Law Journal*



From: Paul Hanna [mailto:pxh@manningllp.com]
Sent: Monday, October 03, 2016 11:07 AM
To: Alejandro Caraveo; Shana Scarlett
Cc: Jeff Friedman; Brian Miller; Colleen Cleary
Subject: RE: ODD - Request for discovery conference

Shana,

Quanta has waived any privileges between itself and its prior counsel.

The drives themselves came directly from Taiwan and were produced in their entirety. I can discuss with my client contact this week to determine if he can provide direction to new production.

We can propose dates for the Caroline Lin, Haw Chen and Shu-Ming Tseng depositions by the end of the week.

Paul Hanna, Esq.



MANNING & KASS
ELLROD, RAMIREZ, TRESTER LLP

801 S. Figueroa St, 15th Floor

Los Angeles, California 90017

Tel: 213.624-6900 | Fax: 213.624-6999 | Extension: #2472

Email: PXH@manningllp.com | Website: www.manningllp.com

Los Angeles | Irvine | San Diego | San Francisco | Scottsdale | New York

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From: Alejandro Caraveo
Sent: Monday, October 03, 2016 7:23 AM
To: Shana Scarlett; Paul Hanna
Cc: Jeff Friedman; Brian Miller; Colleen Cleary
Subject: RE: ODD - Request for discovery conference

Hi Shana,

My apologies for not getting back to you Friday. We're starting a four-week trial this Monday and I was in deposition every day last week, including Saturday and Sunday. Paul Hanna will be taking over lead while I am in trial.

It may be helpful to set up a conference call to discuss these issues before presenting them before the Court.

Thanks,

Alex

From: Shana Scarlett [<mailto:shanas@hbsslw.com>]
Sent: Sunday, October 02, 2016 7:46 PM
To: Paul Hanna; Alejandro Caraveo
Cc: Jeff Friedman; Brian Miller; Colleen Cleary
Subject: RE: ODD - Request for discovery conference

Paul and Alex,

Having not heard from you regarding our requests below, IPPs intend to raise the following issues with Magistrate Judge Spero via letter brief:

- 1) The production of the custodial documents for Ho, Liu, Peng and Yu;
- 2) Deposition dates for Caroline Lin, Haw Chen and Shu-Ming Tseng.

We propose exchanging initial drafts of the briefs this Thursday at noon PT; and final drafts on Friday at noon PT. IPPs will take care of the filing.

Thanks, Shana

Shana E. Scarlett | Hagens Berman Sobol Shapiro LLP | 510-725-3032

From: Shana Scarlett
Sent: Thursday, September 29, 2016 5:00 PM
To: Paul Hanna (pxh@manningllp.com); Alejandro Caraveo (ayc@manningllp.com)

Cc: Jeff Friedman; Brian Miller; Colleen Cleary
Subject: RE: ODD - Request for discovery conference

Alex and Paul,

Could you please propose a time this week to discuss Quanta's document production? Without hearing from you, and given the press of the close of discovery, we feel obligated to raise this with the Court.

Shana Scarlett | Hagens Berman Sobol Shapiro LLP | Direct: (510) 725-3032

From: Shana Scarlett
Sent: Thursday, September 22, 2016 2:05 PM
To: 'Paul Hanna (pxh@manningllp.com)'; Alejandro Caraveo (ayc@manningllp.com)
Cc: Jeff Friedman (jefff@hbssl.com); Brian Miller; Colleen Cleary
Subject: ODD - Request for discovery conference

Alex,

We have stopped our review of the drive produced by QSI, as we have run across what appears to be privileged communications between QSI and its former counsel. Could you please let us know whether you intend to claim privilege over any of the materials and if so, send a clawback letter?

As a separate and related matter, we are unable to identify any new productions by QSI on that drive – as committed to by Quanta and confirmed as recently as March 23, 2016 (see attached letter). If the productions for custodians Ho, Liu, Peng and Yu were contained on this drive could you either: 1) give us a pointer to those productions; or 2) provide a new drive with only these new productions?

I am available tomorrow at noon PT for a discovery conference if that would help expedite resolution of this issue.

Thanks, Shana

Shana Scarlett | Partner
Hagens Berman Sobol Shapiro LLP
715 Hearst Ave, Suite 202 - Berkeley, CA 94710
Direct: (510) 725-3032
shanas@hbssl.com<<mailto:shanas@hbssl.com>> | www.hbssl.com<<http://www.hbssl.com>>

[[cid:image001.jpg@01D21A72.E9B3E300](#)]

Named to 2015 Plaintiff's Hot List<<http://www.hbssl.com/newsroom/Hagens-Berman-Named-to-National-Law-Journal-Plaintiffs-Hot-List-for-Eighth-Year>> by The National Law Journal

[[cid:image002.png@01D21A72.E9B3E300](#)]<<http://www.facebook.com/pages/Seattle-WA/Hagens-Berman/118070921551259>> [[cid:image003.png@01D21A72.E9B3E300](#)] <<http://twitter.com/classactionlaw>>

EXHIBIT 6

From: Freddie Hsieh
Sent: Thu, 18 Sep 2003 00:53:38 GMT
To: Simon Hwang
CC: Joe Tsai; Michael Gong
Subject: meeting minutes - Quanta, Mitac

Hi Simon,

Quanta is asking for October pricing (Q4) and last time we offered US\$ 66 as reference.

We need to quote the price no later than tomorrow as Gateway is also asking for the price.

As for Gateway, both QSI and HLDS are quoting mid 60's, and that's the reason for Gateway's target price for US\$ 64. I suggests we quote US\$ 66

As for slim dvd +rw, there is a US\$ 10 delta between slim dvd +rw and slim dvd dual. For October (Q4 pricing), the price will drop to US\$ 150 for dvd dual. (Pioneer is now being used by Quanta and HLDS is being tested as well as other brands)

I suggests we quote US\$ 140-135 for slim dvd +rw for Q4'03.

As for slim dvd, I suggests we stay the same at US\$ 45.

BR freddie
Freddie Hsieh
LiteOn IT Corp.
14F., No. 392, Ruey Kuang Road, Neihsu
Taipei 114, Taiwan, R.O.C.
tel. 886-2-8798-2886 ext. 8859
fax 886-2-8798-2822

Please use new email address: freddie_hsieh@liteonit.com

Simon Hwang
2003/09/17 07:24 PM

To: Michael Gong/TPE/LITEONIT@LITEONIT, Joe Tsai/HCP/LITEONIT@LITEONIT
cc: Freddie Hsieh/TPE/LITEONIT@LITEONIT, Jill Cheng/TPE/LITEONIT@LITEONIT
Subject: meeting minutes - Quanta, Mitac

Michael, Joe,

Meeting minutes highlight as below.

1. Quanta, Ivan Chen, Brand Chang

- Sept. total NB volume 1.1M (HP 525k, Dell 300k, Sony 93k, Acer 80k, Apple 75k, GW 60k, IBM 30k, NEC 20k)
- Acer ZP1 demand on DVD RW: 30k in Sept., 40k in Oct.
- white box volume is less than 50k/month (we will contact their PM to dig out opportunity on new products)
- they may request rebate pricing model

2. Mitac, Iris Peng

- they will not take any Combo from us in Sept. because they have stock.
- she saw \$62 on QSI invoice for Medion consignment Combo.
- she request us to quote Oct. price for 10k, and expect below \$65.

Simon Hwang

ODDCIV03329742**Metadata**

Box#	HOW012	ORIGINAL
Cc	Joe Tsai;Michael Gong	ORIGINAL
Company	Howrey LLP	ORIGINAL
Custodian	Hsieh, Freddie	ORIGINAL
Docdate	09/18/2003	ORIGINAL
Docid	ODDCIV-003329742	ORIGINAL
DocType	Message	ORIGINAL
Filepath	HDD001_HsiehF_06\Helios\Helios Batch 2\Hsieh F\PHILI-TWN-1-HD-03B\A_Freddi.nsf::a_Freddi_nsf_69aca289fb206c5f32b1b60a3c3da59e 1CCD3B55D4D23B7548256DA500365F4E::Mail_1CCD3B55D4D23B7548256DA500365F4E.html	ORIGINAL
FolderID	All, Discussion Threads, Quanta forecast/issues, Sent	ORIGINAL
From	Freddie Hsieh	ORIGINAL
Hash	bbb99fd30578ad98811557716b77f2c2	ORIGINAL
Lang	English	ORIGINAL
Pgcount	2	ORIGINAL
Prprties	E-mail	ORIGINAL
Subject	meeting minutes - Quanta, Mitac	ORIGINAL
Timesent	12:53 AM	ORIGINAL
To	Simon Hwang	ORIGINAL

EXHIBIT 7

From: Virginia.Lin 林慧甄 [Virginia.lin@qsitw.com]
Sent: 8/8/2008 6:39:02 AM
To: Sally.huang 黃雅平 [Sally.huang@qsitw.com]
CC: caroline.lin 林初慈 [caroline.lin@qsitw.com]; haw.chen 陳尚昊 [haw.chen@qsitw.com]; Hiko.lin 林彥成 [Hiko.lin@qsitw.com]
Subject: job transfer to Caroline

Dear Sally,

I have passed the related data for HP to Caroline.

It includes:

1. A list of job activities and open issues
2. Contact information including TOP and our competitors.
3. Data of all history record.

I will take care of the activities by this weekend. From next week, I will assist you if necessary but all issues will be handled by you. I will leave this team after Aug 15 according to your proposal to HP.

Please let me know if any comments you have.

Best regards,
Virginia



Q725951**Metadata**

Date Received	8/8/2008 0:00 AM	ORIGINAL
Date Sent	8/8/2008 0:00 AM	ORIGINAL
Document Extension	msg	ORIGINAL
Email CC Text	caroline.lin <caroline.lin@qsitw.com>; haw.chen <haw.chen@qsitw.com>; Hiko.lin <Hiko.lin@qsitw.com>	ORIGINAL
Email From Text	Virginia.Lin <Virginia.lin@qsitw.com>	ORIGINAL
Email Subject	job transfer to Caroline	ORIGINAL
Email TO Text	Sally.huang <Sally.huang@qsitw.com>	ORIGINAL
Extracted Text	.\\Q028\\TEXT\\TEXT015\\Q000725951.txt	ORIGINAL
File Name	job transfer to Caroline.msg	ORIGINAL
File Size	57344.00	ORIGINAL
MD5 Hash	9B9DEC5E379F305F33801DA7A8FDE41F	ORIGINAL

EXHIBIT 8

From: Caroline. Lin Lin Chu-Tsu <caroline.lin@qsitw.com>
To: 'Sally.huang Huang Ya-Ping' <Sally.huang@qsitw.com>, <haw.chen@qsitw.com>
Cc: 'Yvonne.Lin Lin Mei-Ling' <Yvonne.Lin@qsitw.com>, 'William.Wang Wang Wei-Ling' <William.Wang@qsitw.com>, 'maggie.chang Chang Sho-Chuan' <maggie.chang@qsitw.com>
Subject: [TOP]Expenses in Houston: Jan.~Mar.09
Date: Mon, 30 Mar 2009 19:51:51 -0500
X-Priority: 1 (Highest)
Content-Language: zh-tw
Importance: High
X-OriginalArrivalTime: 31 Mar 2009 00:56:07.0825 (UTC) FILETIME=[79CC5010:01C9B19B]

Dear Haw and Sally,

Pls see the attachment for the expense detail during Jan.~Mar.09 and kindly approve it;

Then I may send all receipts back to QSI (Fin.: Yvonne Lin) for the following process.

Thanks & Best Regards,

.....
Caroline Lin Lin Chu-Tsu
Quanta Storage Inc. | OSBU Sales
Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile: 886-(0)963-092971

E-mail: Caroline.Lin@qsitw.com
.....



QUANTA_HAW_00061411PCT

No.	Category
1	Airfare
2	Accommodation
3	Accommodation
4	Accommodation
5	Accommodation
6	Transportation costs
7	Transportation costs
8	Transportation costs
9	Transportation costs
10	Transportation costs
11	Transportation costs
12	Transportation costs
13	Transportation costs
14	Transportation costs
15	Transportation costs
16	Transportation costs
17	Transportation costs
18	Transportation costs
19	Transportation costs
20	Transportation costs
21	Transportation costs
22	Transportation costs
23	Transportation costs
24	Transportation costs
25	Transportation costs
26	Postal and phone fees
27	Postal and phone fees
28	Postal and phone fees
29	Postal and phone fees
30	Postal and phone fees
31	Postal and phone fees
32	Postal and phone fees
33	Postal and phone fees
34	Postal and phone fees
35	Postal and phone fees

36	Postal and phone fees
37	Postal and phone fees
38	Postal and phone fees
39	Entertainment expenses
40	Entertainment expenses
41	Entertainment expenses
42	Entertainment expenses
43	Entertainment expenses
44	Entertainment expenses
45	Entertainment expenses
46	Entertainment expenses
47	Entertainment expenses
48	Entertainment expenses
49	Entertainment expenses
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90	Entertainment expenses
91	Entertainment expenses
92	Entertainment expenses
93	Entertainment expenses
94	Entertainment expenses
95	Entertainment expenses
96	Entertainment expenses
97	Entertainment expenses
98	Others
99	Others
100	Others
101	Others
102	Others
103	Others
104	Others
105	Others
106	Others
107	Others
108	Others
109	Others
110	Others

Item
Airport trolley fee
Subtotal:
Utility bill by Jan.09
Utility bill by Feb.09
Rent for Mar.-May09
Utility bill by Mar.09
Subtotal:
Taxi fee
Gasoline
Gasoline
Gasoline
Gasoline
Gasoline
Gasoline
Gasoline
Gasoline
Gasoline
Gasoline
Parking-Houston Livestockshow w/Andrew's
Gasoline
Gasoline
Parking-Houston RODEO w/Tanya
Gasoline
Gasoline
Gasoline
Gasoline
Firestone-car maintainence
Firestone-car maintainence
Subtotal:
T-Mobile HotSpot Purchase: Day Pass
Mobile travel wall charger
Mobile travel extra accessories
T-Mobile for Jan.09
T-Mobile for Feb.09
T-Mobile for Mar.09
T-Mobile FlexAccount Refill: USD100 quota
COMCAST OF HOUSTON Bill by Jan.30
COMCAST OF HOUSTON Bill by Feb.30
Electricity Bill for Reliant Energy Dec.08

Electricity Bill for Reliant Energy Jan.09
Electricity Bill for Reliant Energy Feb.09
Dynasky eCard Recharge Card
Subtotal:
Houston Livestockshow w/Andrew's
Gifts for Andrew's New Born Baby
Starbucks for weekly review meeting 01/13
Lunch w/Edward at BJ's
Lunch w/Tanya at Lupe Tortilla
Fruit for Andrew's
Fruit for Andrew's
Starbucks for weekly review meeting 01/20
Lunch w/Edward at BJ's
Snack w/PLDS JC
Lunch w/ISS Tom & Long at Macaronie's
Lunch w/Tanya at Feng's Kitchen
Starbucks for weekly review meeting 01/27
Lunch w/Edward at County Line
Dinner w/Tanya at SiChuan CNY Eve
Lunch w/John Lord at WAZA
Lunch w/Tanya at WAZA
RodeoHouston Tickets w/Tanya
Starbucks for weekly review meeting 02/03
Lunch w/Edward at Koi
Lunch w/mPC Engineering team at Babin's
Dinner w/Tanya at Hong Long
Gift to Andrew's Party
Lunch w/Edward at PapaDeaux
Starbucks for weekly review meeting 02/10
Starbucks w/Edward
Dinner w/John Lord at Flemington's
Dinner w/mPC Eng. Team at WAZA
Fruit for Andrew's
Snack w/Tanya at Potbelly
Starbucks for weekly review meeting 02/17
Lunch w/Edward at Babin's
Snack w/PLDS JC
Lunch w/Tanya at HB's
Drinks & snack w/Andrew's
Starbucks for weekly review meeting 02/24
Lunch w/Edward at Hido
Dinner w/Tanya at Tokyo One

Lunch w/Edward at Café Express
Starbucks for weekly review meeting 03/03
Lunch w/Edward at KIRIN
Satrbucks w/Edwrad
Lunch w/Tanya at TGI Friday's
Starbucks for weekly review meeting 03/10
Lunch w/Edward at PapaDeaux
Lunch w/Tanya at Mogolian Hot Pot
Gift to GPS TW Tina
Lunch w/Ribin at Fish Market
Starbucks for weekly review meeting 03/19
Lunch w/John Lord at P.F.Chang's
Dinner w/Tanya at Peking
Lunch w/Edward at Rock Fish
Starbucks for weekly review meeting 03/24
Lunch w/Edward at California Pizza
Dinner w/ISS Tom & Long at Saltgrass
Dinner w/Tanya at SiChuan King
Lunch w/mPC Eng. Allison at Macaronie's
Dinner w/Tanya at Enoteca Italian
Lunch w/Edward at WAZA
Subtotal:
INCOMING FOREIGN WIRE FEE in Jan.09
INCOMING FOREIGN WIRE FEE in Mar.09
INSUFFICIENT FUNDS FEE
EXTENDED OVERDRAFT FEE
Stationery: printer ink, whiter & filing wallet
Housing maintenace expenses:Air Fresher.Cleaning tools
Housing maintenace expenses: Fridge contenter
Envelopes
Stationery: Glue & Lock
Housing maintenace expenses: Bed sheet
Testing Media in Micro Center
Testing Media in Fry's
Housing maintenace: Air Fresher
Subtotal:

Jan.~Mar.09 Total:

US\$	NT\$	Remark
4.00		No Receipts
4.00	-	
23.07		
20.88		
	95,596	US\$2,719.95
19.44		
63.39	95,596	
55.00		Houston Airport-Apartment
20.11		+car wash
22.10		
22.60		
21.60		
20.00		
22.60		
21.30		
25.25		
19.50		
12.00		
22.81		
23.00		
12.00		
24.00		
24.00		
28.05		
25.66		
34.77		
	594	US\$17.39
456.35	594	
5.99		
16.23		
36.48		
46.47		
50.00		
41.88		
108.25		
	3,902	US\$112.87
	4,030	US\$115.04
69.33		

241.00		
78.28		
130.00		
823.91	7,932	
30.00		
122.82		
11.58		
49.50		
48.00		
7.99		
15.40		
17.97		
52.00		
17.00		
69.00		
75.00		
9.69		
50.00		
42.00		
48.00		
35.00		
	1,453	US\$42.35
11.69		
30.00		
75.00		
56.00		
62.79		
63.00		
9.69		
12.50		
230.00		
115.00		
12.16		
6.00		
12.56		
55.00		
33.00		
36.00		
39.15		
9.69		
44.00		
46.80		

23.64		
11.91		
32.00		
8.34		
47.00		
10.12		
70.00		
80.00		
31.17		
34.60		
11.80		
61.00		
75.00		
43.70		
10.34		
42.00		
69.00		
	1,956	US\$57.00
41.00		
27.50		
27.50		
2,418.60	3,409	
15.00		
15.00		
32.00		
12.50		
105.27		
55.16		
27.05		
2.41		
5.82		
32.46		
141.73		
	744	US\$21.64
27.06		
471.46	744	

4,237.71 108,275

CERTIFICATE OF TRANSLATION ACCURACY

State of California
October 23, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).


I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00061411 - QUANTA_HAW_00061412, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 23, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 9

	PT1 (Expense Claim Form)		Date created: 10/3/2008 Staff: 008811 Chen Shang-Hao Department: 11000 OS Business Unit	
Claim number: PT1081002009 Claim status: approved			Attachment:	
*Claimant: Chen Shang-Hao *Contact telephone number (ext.): 1240 Payable to whom:			*Claim explanation: Sep/27: entertainment fee with Pioneer Nojiri-san...3 persons. QSI: William, Hos and me.	
<i>Entertainment fee</i>				
*Payment method: • transfer payment <input type="radio"/> reimbursement <input type="radio"/> check <input type="radio"/> cash <input type="radio"/> petty cash				
*Check date • per company's regulation <input type="radio"/> date designated Date ' year ' month ' day				
Cost Center	*Currency	*Amount		
11000	NTD	75000		
		To be filled by Finance Dept.		To be filled by Finance Dept.
Project Code	Exchange rate 1	Amount paid 75000		

Pasting line

ROC 09-10/2008

[illegible]

[text obscured] Paste original receipts here. Please make a copy of the receipts and paper clip the copies here.

CD

[illegible] Company

No. [illegible] 8480058

Taipei, Chong-San

97-09-27

*000000

16836218

1 75000

7

75000

1*00-03

5573*

簽核批示

國語	
算術	
理科	
社會科	
體育	
音樂	
美術	
勞作	
衛生	
其他	



<http://eip.qsinc.com.tw/PortalCSV/S/F/Report/REQSI004.aspx?formno=PT1081002009...> 2008/10/3

CONFIDENTIAL



Q000009940PCT

CERTIFICATE OF TRANSLATION ACCURACY

State of California

November 5, 2013

Country of USA

I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English Q000009940, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.

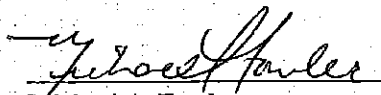

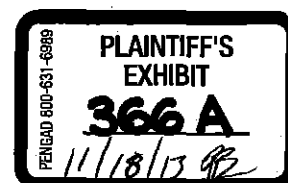

Michael A. Fowler

EXHIBIT 10

A000000008

Page 1 of 1

 Quantix Storage	XF1 (Travel Expense Claim Form)		Date created: 11/12/2008 Staff: 880011 Chen Shang-Hao Department: 11000 OS Business Unit	
	Claim number: XF1081110002 Claim status: approved		Attachment:	
*Original claim: XE1081031004		Location: Overseas		
Airfare	NT\$13,800	Explanation		
Lodging Cost	JP\$33,000	Explanation	check in Nov/3 check out on Nov/6.	
Dining Cost	USD\$200	Explanation	from Nov/3 to Nov/6 total 4 days.	
Transportation	JP\$14,280 NT\$900	Explanation	One ticket JP\$6,220 Phoebe's ticket included	
Airport Tax		Explanation		
Postal and Phone cost		Explanation		
Entertainment cost		Explanation		
Others		Explanation		
Total	NTD14,700/JPY47,280/USD200		Project ID	
Currency Exchange Explanation (To be filled by Finance)		Cost Summary (To be filled by Finance) 657		
JPY47,280 * 0.3332 = 15,754		Amount advanced: NTD \$0		
USD200 * 32.92 = 6,584		Amount claimed: NTD \$37038		
Visiting party & purpose	11/03-11/07 Japan business trip costs NTD14,700 + 15,754 + 6,584 = 37,038 Location: Tokyo Explanation: HP OPU7 on 11/4 VAIO meeting on 11/5 Pioneer meeting with Usui-san on 11/6			
Approval by 930026 Lin Mei-Ling 880005 Ho Shi-Chi [handwritten] 930026 Lin Mei-Ling				



CONFIDENTIAL

Q000009969PCT

Travel Agency Receipt

Receiver: QSI Storage Inc.

ROC 10/31/2008

TN8086754

Receipt ID: 16836218 TEL: 03-3288090

TN80867548

Address: 5F No. 188, Wen Hua 2nd Rd., Kuei Shen Hsiang,
Tao Yuan Shien, Taiwan

Description	Quantity	Price	Amount	Memo
08 FT1031 8-867651 Chen Shang-Hao Round trip Taiwan Tokyo airfare			13,800 NTD	13,143 657 13,800 Please notify changes within 5 days before the month, there's no exception
				Business Stamp -- Receipt ID stamp
				Hsiong-Shi Travel Agency Inc.
Total			\$13,800 NTD	Taoyuan branch
Total NTD (Capital letters)	Thirteen Thousand Eight Hundred NTD			Receipt ID Stamp Receipt ID: 70455221 Contact: Ho Yu-Chin Telephone #: 347-6699 17F-2, No. 207, Fu-Shin Rd., Taoyuan City

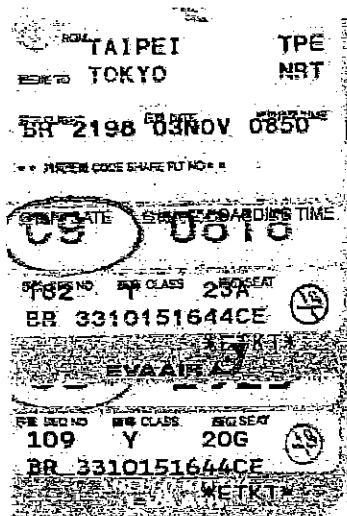
[illegible] in violation of law, shall forfeit any claims.

This receipt shall be used, based on Taiwanese Tax #821481937 permitted by Department of Finance on 03/27/1993.

This receipt is duplicated by Travel Agency Union for customer's accounting purposes. No separate receipt will be issued.

Processed by: Hu Ching-Han 10/31 1

II. Check payable: Hsiong-Shi Travel Agency Inc.



Date 11/3/08
Car No. 8008 00
Basic Fare ¥1430
Total ¥1430

Received as above.

Other transit fees ¥
MASTUMARU TANI

Door No: 334

For lost items, contact the following
organization:[illegible] Tokyo Business Cooperative
Johoku Branch TEL 3821-5665Address inquiries to Tokyo Nobuto Taxi
Association

TEL 03-3947-1461

Address requests to Tokyo Taxi Center

TEL 03-3648-0300

[text effaced]

Address comments or requests to Kanagawa Taxi
Service Center TEL 045-[illegible]

[text effaced]

For lost items or requests, contact this company
or Tokyo Taxi Center (Inc.)

TEL 03-3648-0300

CREDIT CARD SALES SLIP
[text effaced] No. UC-XXXXXXXXXXXX7501
[text effaced] Payment Method: Lump sum
[Reserved] Seat Ticket 1 ticket (book)
Narita Express No. 41
Shinagawa → Narita Airport passenger ticket included
[text effaced] done only at locations handling East Japan.
Reservations apply to [text effaced] methods.
Please retain [text effaced].
20590-03 Issued at Shinagawa Station@3

R001 Has XX-
XX
¥2,910
R001 Has XX-
XX
¥6,220

CONFIDENTIAL

Q000009970PCT

Quanta Storage Inc.

Expense receipt

Purpose	Prepaid Suica 2,000 Japanese Yen
Reason for the lack of receipt	Forgot to copy the receipt
Amount	2,000 Japanese Yen
Memo	2,000 Japanese Yen

Section lead:

Chen Shang-Hao 11/10

Department lead:

Processed by:

Cheng Li-Wen (Cheryl)

[seal]

[bilingual text:]

1737

Mr. HAW CHEN

TEL 03-5730-7770 FAX 03-5730-7778
 TEL 03-5730-7770 FAX 03-5730-7778

到着日 ARRIVAL	出発日 DEPARTURE	人数 PERSON(S)	発行日 ISSUED	備考 REMARKS
2008/11/03	2008/11/06	1	2008/11/06	

日付 DATE	部屋 ROOM No.	摘要 DESCRIPTION	料金 CHARGES	お預り金 CREDITS	残高 BALANCE
11/03	1737	CREDIT CARD		33,000	
	1737	Room Charge 11,000x 1	10,900		
	1737	ACCOMMODATION TAX	100		-22,000
11/04	1737	Room Charge 11,000x 1	10,900		
	1737	ACCOMMODATION TAX	100		-11,000
11/05	1737	Room Charge 11,000x 1	10,900		

CONFIDENTIAL

Q000009971PCT

[bilingual text:]

東京都港区芝浦4-2-8
Shibaura 4-2-8, Minato-ku, Tokyo 108-0023 JAPAN
TEL 03-5730-7770 FAX 03-5730-7778

1737 Mr. HAW CHEN

到着日 ARRIVAL	出発日 DEPARTURE	人数 PERSON(S)	発行日 ISSUED	備考 REMARKS
2008/11/03	2008/11/06	1	2008/11/06	

日付 DATE	部屋 ROOM NO.	摘要 DESCRIPTION	料金 CHARGES	お預り金 CREDITS	残高 BALANCE
11/03	1737	CREDIT CARD		33,000	
	1737	Room Charge	11,000x 1	10,900	
	1737	ACCOMMODATION TAX		100	-22,000
11/04	1737	Room Charge	11,000x 1	10,900	
	1737	ACCOMMODATION TAX		100	-11,000
11/05	1737	Room Charge	11,000x 1	10,900	
	1737	ACCOMMODATION TAX		100	

総合計 TOTAL	料金 CHARGES	お預り金 CREDITS	ご請求金額 BALANCE DUE	ご返金額 REFUND
	33,000 (incl. TAX ¥1,557)	33,000	0	

なお、お勘定には消費税が加算されております。
Tax are added to your bill.

ご署名
SIGNATURE

ご住所
ADDRESS

会社名
COMPANY NAME

0 007127501 184
702 000000000

ありがとうございました。またのご利用をお待ち申し上げます。
Thank you for patronage. We look forward to seeing you again.

領 収 書
RECEIPT

Mr. HAW CHEN

¥33,000 (incl. TAX ¥1,557)

Revenue
Stamp

No. 007127501

08.11.06 0 007127501 184
702 000000000

ホテルヴィラフォンテーヌ東京三田
HOTEL Villa Fontaine Tokyo-Mita
〒108-0023 東京都港区芝浦4-2-8
Shibaura 4-2-8, Minato-ku, Tokyo 108-0023 JAPAN
TEL 03-5730-7770 FAX 03-5730-7778

CONFIDENTIAL

Q000009972PCT

CERTIFICATE OF TRANSLATION ACCURACY

State of California

November 5, 2013

Country of USA

I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English Q000009969, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.

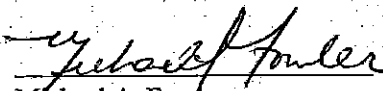

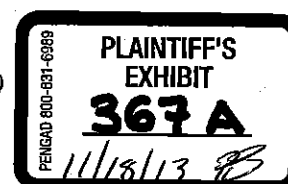
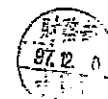

Michael A. Fowler

EXHIBIT 11

A000000008

Page 1 of 1

		XF1 (Travel Expense Claim Form)		Date created: 12/30/2008 Staff: 880011 Chen Shang-Hao Department: 11000 OS Business Unit	
Claim number: XF1081226003 Claim Status: Approved			Attachment:		
*Original claim XE1081217004			Location: Overseas		
Airfare	NT\$9,700 X	Explanation			
Lodging Cost	JP\$9,600 X	Explanation	12/23		
Dining Cost	US\$100	Explanation	2 days		
Transportation cost		Explanation			
Airport Tax		Explanation			
Postal and Phone cost		Explanation			
Entertainment cost		Explanation			
Others		Explanation			
Total	NTD9,700/JPY9,600/USD100		Project ID		
Currency Exchange Explanation (To be filled by Finance)		Cost Summary (To be filled by Finance) 462 [handwritten]			
JPY9,600*0.3673=3,526		Amount advanced: NTD 0			
USD100*33.02=3,302		Amount claimed: NTD 16,528			
Visiting party & purpose	12/23-12/24 Japan business trip costs NTD9,700+3,526+3,302=16,528 Location: Japan Fukuoka Explanation: to PCC with Hos and Nelson				
Approved by	930026 Lin Mei-Ling 880005 Ho Shi-Chi 930026 Lin Mei-Ling				

<http://eip.qsinc.com.tw/PortalCSV/S/F/Report/A0000000008.aspx?formno=XF1081226...> 2008/12/30


CONFIDENTIAL

Q000009997PCT

Travel Agency Receipt

[illegible] please pay based on this ID number

Receiver: QSI Storage Inc.

ROC 12/19/2008

Receipt ID: 16836218

TN80878455

Address: 5F NO. 188, Wen Hua 2nd Rd., Kuei Shen Hsiang,
Tao Yuan Shien, Taiwan

Description	Quantity	Price	Amount	Memo
695-3316379916 - CHEN/SHANGHAO ADT	1	9,700 NTD	9,700 NTD	9238 462 9700
				Business Stamp - Receipt ID stamp
				Media Receipt ID Stamp
				Dong Nan Travel Agency Inc. Taoyuan branch Receipt ID: 11384502 Contact: Tsai Chun-Cheng 3F, No. 66, Nan-Hua Street, Taoyuan City Tel: 03-3354677
Total			\$9,700 NTD	
Total NTD (Capital letters)	Nine Thousand Seven Hundred NTD			

[illegible] in violation of law, shall forfeit any claims, based on this receipt.

This receipt shall be used, based on Taiwanese Tax #821481937 permitted by Department of Finance on 03/27/1993.

This receipt is duplicated by Travel Agency Union for customer's accounting purposes. No separate receipt will be issued.

Processed by: Pan Yu-Ting Taoyuan Business

Payment Agreed by:

SHD/NOVTE/PMT NOT RPD/ON 678FEE-21HANS

CMNZP3

BR 2105/ 23DEC08

FUKUOKA

FUK

BR 2105/ 24DEC08

TAIPEI

TPE

VOID VOID

--VOID--

VOID VOID

--VOID--

TPE BR FUK272.56R TPE272.56R/0545.22RND RDE31.051

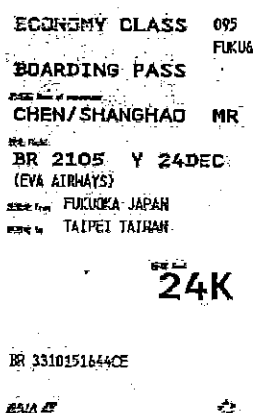
TWD 17368
 TN 300
 SW 350
 YD 952
 TWD 19010

MISC/15134305255/CHFOUF

*****NOT VALID FOR TRAVEL*****

695 3316 379916 3

695 3316 379916 3



CONFIDENTIAL

Q000009998PCT

[bilingual text:]

ご利用明細書
Description

No. **181127**

氏名 (Name): **HAW CHEN**

〒855-0001 熊本県 玉名市 吉田
TEL 0965-73-2998
FAX 0965-73-2998

Room No.	Date	Description	Qty	Unit Price	Charge
0413	2008/12/23	2008/12/24	2008/12/24	吉田	1
12/23	0413	One night, breakfast included	1	9,450	9,450
		Bathing Tax (subtotal)			150
					(9,600)
				Total	9,600
Signatures				Advances/Deposits	0
ご請求先 Company				Coupons/Vouchers	0
				Refunds	0
				Balance Due	9,600

Transfer requests: Our bank is Kumamoto Family Bank, Tamana Branch; ordinary deposits 2103643
Tsukasa Tourism Development Tsukasa Royal Hotel

Message:

No. **181127**
氏名 (Name): **HAW CHEN**

Receipt

Received
12/24/08
Tsukasa Royal
Hotel

Total	9,600	¥9,600-
Advances/Deposits	0	
Coupons/Vouchers	0	
Refunds	0	
Date Received		12/24/2008

〒855-0001 熊本県 玉名市 吉田
TEL 0965-73-2998
FAX 0965-73-2998

Tamana, Kumamoto
Prefecture [illegible]

080
38

<http://eip.qsinc.com.tw/PortalCSV/S/F/Report/A000000008.aspx?formno=XF1081226...> 2008/12/30

CONFIDENTIAL

Q000009999PCT

CERTIFICATE OF TRANSLATION ACCURACY

State of California

November 5, 2013

Country of USA

I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English Q000009997, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.

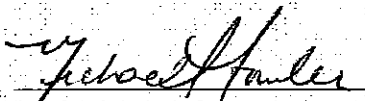


Michael A. Fowler

EXHIBIT 12

A000000008

Page 1 of 1

	XF1 (Travel Expense Claim Form)		Date created: 12/30/2008 Staff: 880011 Chen Shang-Hao Department: 11000 OS Business Unit	
	Claim number: XF1081226002 Claim Status: Approved		Attachment:	
*Original claim XE1081210001		Location: Overseas		
Airfare	NT\$11,700 X	Explanation		
Lodging Cost	JP\$22,000 X	Explanation	12/10 and 12/11	
Dining Cost	US\$150	Explanation	3 days	
Transportation cost	JP\$13,430 X NT\$474 X	Explanation	JP for 4 persons (wesley, Patrick, Shuming and myself) from Narita to Tokyo. NT for parking fee for 3 days.	
Airport Tax		Explanation		
Postal and Phone cost		Explanation		
Entertainment cost		Explanation		
Others		Explanation		
Total	NTD12,174/JPY35,430/USD150		Project ID	
Currency Exchange Explanation (To be filled by Finance)		Cost Summary (To be filled by Finance) 557+23		
JPY35,430*0.3634=12,875 X		Amount advanced: NTD 0		
USD150*33.49=5,024		Amount claimed: NTD 30,073		
Visiting party & purpose	12/10-12/12 Japan business trip costs NTD12,174+12,875+5,024=30,073 Location: Tokyo Explanation: Optiarc monthly review meeting on Dec/11, and Dec/12 to Pioneer PPM: Patrick and Wesley will join. Sales: Shuming Nelson will lead the meeting.			
Approved by:	930026 Lin Mei-Ling 880005 Ho Shi-Chi 930026 Lin Mei-Ling			


<http://eip.qsinc.com.tw/PortalCSV/S/F/Report/A000000008.aspx?formno=XF1081226...> 2008/12/30


CONFIDENTIAL

Q000009994PCT

Travel Agency Receipt

[illegible] please based on this ID number

Receiver: QSI Storage Inc.

ROC 12/09/2008

Receipt ID: 16836218

TN80876 [effaced]

Address: 5F NO: 188, Wen Hua 2nd Rd., Kuei Shen Hsiang,
Tao Yuan Shien, Taiwan

Description	Quantity	Price	Amount	Memo
695-3316379169 – CHEN/SHANGHAO ADT	1	11,700 NTD	11,700 NTD	11,143 TPE 55Z TPE 11,700 TPE
				Business Stamp – Receipt ID stamp
				Media Receipt ID Stamp
				Dong Nan Travel Agency Inc. Taoyuan branch Receipt ID: 11384502 Contact: Tsai Chun-Cheng 3F, No. 66, Nan-Hua Street, Taoyuan City Tel: 03-3354677
Total			\$11,700 NTD	
Total NTD (Capital letters)	Eleven Thousand Seven Hundred NTD			

[illegible] in violation of law, shall forfeit any claims.

This receipt shall be used, based on Taiwanese Tax #821481937 permitted by Department of Finance on 03/27/1993.

This receipt is duplicated by Travel Agency Union for customer's accounting purposes. No separate receipt will be issued.

Processed by: Pan Yu-Ting Taoyuan Business

Payment Agreed by:

Product name: (Bundled tickets) Passenger ticket type 8 tickets (books)

Dec. 10th Narita Express No.48 Narita Airport→Tokyo etc.

Refunds are done only at locations handling JR East Japan.

Restrictions apply to alteration and refund methods.

Please retain this slip.

12.10.08 50453-10

Issued at Narita Airport MEM4

<p>Economy Class Boarding Pass / 登機證</p> <p>EE NAME: CHEN/SHANGHAO</p> <p>ISSUE FROM: TAIPEI TPE</p> <p>ISSUE TO: TOKYO NRT</p> <p>ISSUE FLIGHT: BR 2196 10DEC 1500</p> <p>ISSUE CODE SHAPE FLING: C</p> <p>ISSUE DATE: 1428</p> <p>ISSUE CLASS: 40H</p> <p>ISSUE NO: 3310151644CE</p> <p>ISSUE DATE: 1930</p> <p>ISSUE CLASS: 26H</p>	<p>Niceshin Inc.</p> <p>Da-Yuan Hsiang, Guo Lin Tsun 10 [illegible]</p> <p>#49-7</p> <p>Tel: 3838888</p> <p>Date:</p> <p>Purchase:</p> <p>Card #: 08-12-12 23:34#80394462</p> <p>16836218 1:331 machine000001</p> <p>Parking Fee 474 [illegible] tax</p> <p>Amount: 451</p> <p>Sales Tax: 5.090% 23</p> <p>Total: 1 item 474</p> <p>Cash: 474</p> <p>[illegible] return 5 days</p>	<p>Basic Fare ¥1790</p> <p>Total ¥1790</p> <p>Received as above.</p> <p>Teito Motor Transportation Co.</p> <p>Sumida Office</p> <p>TEL03-3625-1661</p> <p>For radio-dispatched taxi requests, call TEL03-3643-6881</p> <p>Thank you for your patronage.</p> <p>For lost items or any concerns, contact our company</p> <p>GPS Code 391-3043-169A</p>
--	--	---

CONFIDENTIAL

Q000009995PCT

[bilingual text:]

第1頁・共1頁

明 細 書

DESCRIPTION

お部屋番号 お名前
ROOM No. NAMENo.007431901
ホテルヴィラフォンテーヌ 東京三田
HOTEL Villa Fontaine Tokyo-Mita
〒108-0023 東京都港区芝浦4-2-8
Shibaura 4-2-8, Minato-ku, Tokyo 108-0023 JAPAN
TEL 03-5730-7770 FAX 03-5730-7778

1636 Mr. CHEN SHANG HAO 様

到着日 ARRIVAL	出発日 DEPARTURE	人数 PERSON(S)	発行日 ISSUED	備考 REMARKS
2008/12/10	2008/12/12	1	2008/12/12	

日付 DATE	お部屋 ROOM No.	摘要 DESCRIPTION	料金 CHARGES	お預り金 CREDITS	残高 BALANCE
12/10	1636	CREDIT CARD		22,000	
	1636	Room Charge 11,000x 1	10,900		
	1636	ACCOMMODATION TAX	100		-11,000
12/11	1636	Room Charge 11,000x 1	10,900		
	1636	ACCOMMODATION TAX	100		

総合計 TOTAL	料金 CHARGES	お預り金 CREDITS	ご請求金額 BALANCE DUE	ご返金額 REFUND
	22,000 (incl. TAX ¥1,038)	22,000	0	

なお、お勘定には消費税が加算されております。

Tax are added to your bill.

ご署名
SIGNATUREご住所
ADDRESS会社名
COMPANY NAMEありがとうございます。またのご利用をお待ち申し上げます。
Thank you for patronage. We look forward to seeing you again.0 007431901 391
702 000000000

領 収 書

RECEIPT

Mr. CHEN SHANG HAO 様

¥22,000 (incl. TAX ¥1,038)

Revenue
stamp

No. 007431901

C. 007431901 391
702 000000000

08.12.12

ホテルヴィラフォンテーヌ 東京三田
HOTEL Villa Fontaine Tokyo-Mita
〒108-0023 東京都港区芝浦4-2-8
Shibaura 4-2-8, Minato-ku, Tokyo 108-0023 JAPAN
TEL 03-5730-7770 FAX 03-5730-77783/12/30
011Chen Shang-Hao
00 Optical Storageick, Shuming
kyo.

nd Dec/12 to

CONFIDENTIAL

Q000009996PCT

CERTIFICATE OF TRANSLATION ACCURACY

State of California

November 5, 2013

Country of USA

I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English Q000009994, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.




Michael A. Fowler

EXHIBIT 13

A000000008

Page 1 of 1

		XF1 (Travel Expense Claim Form)		Date created: 2/17/2009 Staff: 880011 Chen Shang-Hao Department: 11000 OS Business Unit	
Claim number: XF1090202003 Claim Status: Approved			Attachment:		
*Original claim XE1090109002			Location: Overseas		
Airfare	NT\$10,000 X	Explanation			
Lodging Cost	JP\$11,000 X	Explanation	1/13 one night		
Dining Cost	US\$100	Explanation	1/13 and 1/14 2 days		
Transportation cost	JP\$6,560 X	Explanation	From Narita airport to Shinagawa, my ticket and Hos.		
Airport Tax		Explanation			
Postal and Phone cost		Explanation			
Entertainment cost		Explanation			
Others		Explanation			
Total	NTD10,000/JPY17,560/USD100		Project ID		
Currency Exchange Explanation (To be filled by Finance)		Cost Summary (To be filled by Finance) 476 (handwritten)			
JPY17,560*0.3749=6,583		Amount advanced: NTD 0			
USD100*33.295=3,330		Amount claimed: NTD 19,913			
Visiting party & purpose	1/13-1/14 Japan business trip costs NTD10,000+6,583+3,330=19,913 Location: to Tokyo Explanation: visit Pioneer Usui / Nojiri-san				
Approval by	930026 Lin Mei-Ling 880005 Ho Shi-Chi 930026 Lin Mei-Ling				

<http://eip.qsinc.com.tw/PortalCSVSR/R/Report/A000000008>


CONFIDENTIAL

Q000010011PCT

Travel Agency Receipt

TN80848330

[Text effaced]: QSI Storage Inc.

ROC 01/08/2009

[Text effaced]: 16836218 TEL: 03-3288090

TN80848330

[Text effaced]: [text illegible] No. 188, Wen Hua 2nd Rd., Kuei Shen Hsiang, Tao Yuan Shien, Taiwan

Description	Quantity	Price	Amount	Memo
09 FT0112 9-13981 Chen Shang-Hao			10,000 NTD	9524 476 10000 Please notify changes within 5 days before the month, there's no exception. Accepted by:
				Business Stamp – Receipt ID stamp
				Hsiong-Shi Travel Agency Inc.
Total			\$10,000 NTD	Taoyuan branch Receipt ID Stamp Receipt ID: 70455221 Contact: Ho Yu-Chin Telephone #: 347-6699 17F-2, No. 207, Fu-Shin Rd., Taoyuan City
Total NTD (Capital letters)	Ten Thousand NTD			

[Illegible] in violation of law, shall forfeit any claims, based on this receipt.

This receipt shall be used, based on Taiwanese Tax #821481937 permitted by Department of Finance on 03/27/1993.

This receipt is duplicated by Travel Agency Union for customer's accounting purposes. No separate receipt will be issued.

Chang Feng-Huei 1/8 10:43

II. [Illegible] Check payable: Hsiong-Shi Travel Agency Inc.

Boarding Pass / 登機證

CHEN/SHANGHAO

FROM: TOKYO NRT
TO: TAIPEI TPE

FLIGHT: BR 2197
DATE: 14 JAN 1400

SEAT: 38
CLASS: 1320

BR 3310151644CE

Boarding Pass / 登機證

CHEN/SHANGHAO

FROM: TAIPEI TPE
TO: TOKYO NRT

FLIGHT: BR 2198
DATE: 13 JAN 0850

SEAT: D5
CLASS: 0818

BR 3310151644CE

Customer Copy	CREDIT CARD SALES SLIP	R001
Company Name/Member No.	UC-XXXXXXXXXXXX2808	Has XX-XX
Transaction Details: Purchase	Payment type: Lump Sum	¥6,560
Product Name: (Bundled tickets) Passenger ticket type 4 tickets (books)		
Jan. 13 th Narita Express 22 Narita Airport→Shinagawa etc.		
Refunds are done only at locations handling JR East Japan.		
Restrictions apply to alteration and refund methods.		
Please retain this slip.		
1/13/09 20079-06	Issued at Narita Airport MEM3	

INFOX	
(Credit Card Sales Slip)	
(Used in data gathering)	
MERCHANT	
Villa Fontaine Tokyo-Mita	
03-5730-7770	
SALES COUNTER	CLERK
IC/MS Identifier	IC
AID MasterCard	A0000000041010
CARD COMPANY	Visa/Master
SLIP NO	06402
TERMINAL	49536-560-31156
DATE	09/01/13 23:00:59
ACCT NO	XXXXXXXXXXXX2808
CARD SEQUENCE NO	00
EXP DATE	XX/XX
ATC	00049
TRANS NO	850830
TRANS DETAILS	Sale
PMT COND	Lump Sum
TRANS CATEGORY	110
APP CODE	968812
AMOUNT	¥11,000
TOTAL YEN	¥11,000
CHEN, SHANG HAO	
Thank you for your patronage.	
Please come again.	
CUSTOMERS COPY	

CONFIDENTIAL

Q000010012PCT

[bilingual text:]

明 細 書

DESCRIPTION

お部屋番号 お名前
ROOM No. NAME



No. 007604501

ホテルヴィラフォンテーヌ
東京三田

HOTEL Villa Fontaine Tokyo-Mita

〒108-0023 東京都港区芝浦4-2-8

Shibaura 4-2-8, Minato-ku, Tokyo 108-0023 JAPAN

TEL 03-5730-7770 FAX 03-5730-7778

1642 CHEN SHANGHAO.MR 様

到着日 ARRIVAL	出発日 DEPARTURE	人数 PERSONS	発行日 ISSUED	備考 REMARKS
2009/01/13	2009/01/14	1	2009/01/14	

日付 DATE	お部屋 ROOM No.	描 画 DESCRIPTION	料 金 CHARGES	お預り金 CREDITS	残 高 BALANCE
01/13	1642	CREDIT CARD		11,000	
	1642	Room Charge 11,000x 1	10,900		
	1642	ACCOMMODATION TAX	100		

総合計 TOTAL	料 金 CHARGES	お預り金 CREDITS	ご請求金額 BALANCE DUE	ご返金額 REFUND
	11,000 (incl. TAX ¥519)	11,000	0	

なお、お勘定には消費税が加算されております。

Tax are added to your bill.

ご署名
SIGNATURE

ご住所
ADDRESS

会社名
COMPANY NAME

ありがとうございました。またのご利用をお待ち申し上げております。
Thank you for patronage. We look forward to seeing you again.

0 007604501 364
702 000000000

領 収 書

RECEIPT

Revenue
stamp

CHEN SHANGHAO.MR 様

¥11,000 (incl. TAX ¥519)

No. 007604501

0 007604501 364
702 000000000

09.1.14



ホテルヴィラフォンテーヌ東京三田

HOTEL Villa Fontaine Tokyo-Mita

〒108-0023 東京都港区芝浦4-2-8

Shibaura 4-2-8, Minato-ku, Tokyo 108-0023 JAPAN

TEL 03-5730-7770 FAX 03-5730-7778

CONFIDENTIAL

Q000010013PCT

CERTIFICATE OF TRANSLATION ACCURACY

State of California

November 5, 2013

Country of USA

I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English Q000010011, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.

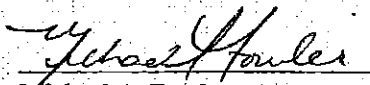
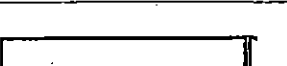

Michael A. Fowler

EXHIBIT 14

Unnamed page

Page 1 of 1

	<p>XF1 (Travel Expense Claim Form)</p>	<p>Date created: 5/12/2009 Staff: 880011 Chen Shang-Hao Department: 11000 OS Business Unit</p>
<p>Claim number: XF1090511007 Claim Status: Approved</p>		<p>Attachment:</p>

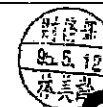
Original claim	XE1090420004	Link page	<u>Show original receipt</u>	
Airfare	NT\$9,300 X	Explanation (need to include ticket stubs)	Taipei → Tokyo Osaka → Taipei	
Lodging Cost	JP\$20,100	Explanation	4/22, 23 in Kawasaki for \$13,800 X 4/24 in Osaka for \$6,300 X	
Dining Cost	US\$150	Explanation	4/22 to 4/24, total 3 days	
Transportation cost	NT\$400 X JP\$20,720 X	Explanation		
Airport Tax		Explanation		
Postal and Phone cost		Explanation		
Entertainment cost		Explanation		
Others		Explanation		
Total	NTD9,700/JPY40,820/USD150	Location	Overseas	Project ID
Visiting party & purpose	4/22-4/25 Japan business trip costs NTD9,700+14,148+5,085=28,933 1. Pioneer Nojiri-san 2. Hitachi OPU for HH and 9.5mm compensation 3. Sharp for OPU planning.			
Currency Exchange Explanation (To be filled by Finance)	JPY40,820*0.3466=14,148 USD150*33.90=5,085 443+ .9			
Amount advanced/claimed (To be filled by Finance)	o	Cost Summary (To be filled by Finance)	NTD28,933	

Approval by	930026 Lin Mei-Ling
	880005 Ho Shi-Chi
	930026 Lin Mei-Ling

<http://eip.qsinc.com.tw/NewPortal/FlowForm/Report/DefaultRtForm.aspx?formno=XF...> 2009/5/12

CONFIDENTIAL

Q000010063PCT



**PLAINTIFF'S
EXHIBIT**

370 A

800-831-6989

11/18/13 ~~FB~~

Travel Agency Receipt

[text effaced]: QSI Storage Inc.

ROC 04/21/2009

TN81824264

[text effaced]: 16836218 TEL: 03-3288090

TN81824264

Address: 3F NO. 188, Wen Hua 2nd Rd., Kuei Shen Hsiang, Tao Yuan Shien, Taiwan

Description	Quantity	Price	Amount	Memo
09 FT0425 9-355689 Chen Shang-Hao TPE/TYO/OSA/TPE, Leaving: 04/22/2009			9,300 NTD	8857 443 9300 Please notify changes within 5 days before the month, there's no exception. Accepted by:
				Business Stamp – Receipt ID stamp
				Hsiong-Shi Travel Agency Inc. Taoyuan branch Receipt ID Stamp Receipt ID: 70455221 Contact: Ho Yu-Chin Telephone #: 347-6699 17F-2, No. 207, Fu-Shin Rd., Taoyuan City
Total			\$9,300 NTD	
Total NTD (Capital letters)	Nine Thousand Three Hundred NTD			

[Illegible] I. cash or check the above-described item, in violation of law, shall forfeit any claims, based on this receipt. This receipt shall be used, based on Taiwanese Tax #821481937 permitted by Department of Finance on 03/27/1993.

This receipt is duplicated by Travel Agency Union for customer's accounting purposes. No separate receipt will be issued.

Processed by: Chang Min-Chun 4/21 19:[text effaced]

II. Check payable: Hsiong-Shi Travel Agency Inc.

CHEN/SHANGHAI

CX565 25APR

TAIPEI

GATE 3 W

SEAT 46D

KANSAI

TAIPEI

CX565 25APR09

BN: 259 DEP: 1120

SL/RUBY

1625225257

10:55

Please be at boarding gate BEFORE 10:55
Otherwise you may not be accepted for travel.

6D/TPE/ET

CATHAY PACIFIC

CHEN/SHANGHAI

TAIPEI

HARUKA TOKYO

CX565 25APR09

BN: 108 DEP: 1250

SL/RUBY

1625225257

FIRST CLASS BUSINESS CLASS Economy Class

CONFIDENTIAL

Q000010064PCT

領 収 証

No. 003061

QSI

殿

平成21年4月25日

¥ 6,300 -

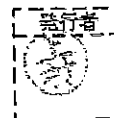
上記金額正に領収致しました



OSAKA NAMBA

御堂筋ナamba

SINCE 2001

大阪市中央区難波3丁目7番20号
TEL (06) 6644-1111

Custo

Comp

TRANSACTION

Payment type: Lump Sum

¥6,300

Product Name: (Bundled tickets) Passenger ticket type 2 tickets (books)

Apr. 22nd Narita Express 22 Airport No. 2→Kawasaki etc.

Refunds are done only at locations handling JR East Japan.

Restrictions apply to alteration and refund methods.

Please retain this slip.

4/22/09 60720-04

C-REX

(CREDIT CARD SALES SLIP)

Participating Merchant Name

Hotel Sunroute Kawasaki

Travel-related business 044-210-3610

DATE 2009/04/22 19:05 48

CARD NO.

10

MASTERCARD

XXXXXXXXXXXX2808

SLIP NO.	EXP DATE	TRAN TYPE
74898	XX-XX	Sale
PMT TYPE	TRAN CODE	COM CODE
Lump Sum	110	0990

TERMINAL 99665-650-74083

CARD COMPANY VISAMASTER(106)

APPROVAL CODE 796903

TRAN NO. 638540

AMOUNT ¥13,800

TOTAL AMOUNT ¥13,800

CHEN, SHANG HAO

Information

Thank you for your patronage.

We look forward to your future visits.

00 AT00046 No00 *15250 0000*

00000041010

[effaced] TERCARD

SALES COUNTER

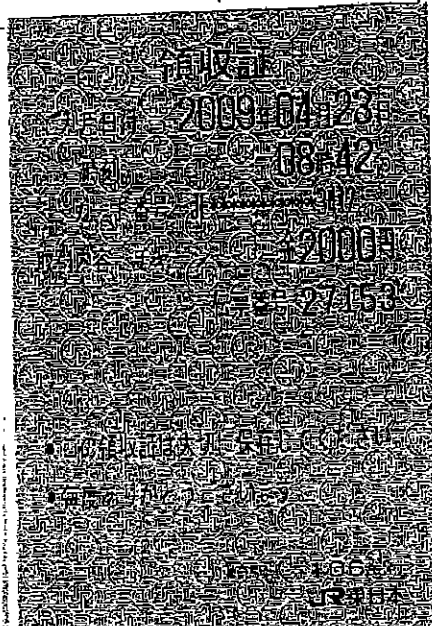
523

CLERK

[illegible]

CUSTOMER COPY

Issued at Airport Station 2 MM2



So Yin Lien Receipt (San Lien Shi So Yin Lin)

IOC March to April 2009 01198218

Niceshin Inc.

Da-Yuan Hsiang, Guo Lin Tsun 10 Sian Kan-

Hsia #49-7

Tel: 3838888

Date:

Purchaser: 04/25/2009 13:34#80394462

Card #: 16836218 1:218 machine000001

Parking Fee 409 [illegible]

Amount: 381

Sales Tax: 5.090% 19

Total: 1 item 400

Cash: 400

[illegible] return 5 days

CONFIDENTIAL

Q000010065PCT

INFLUX
Credit Card Slip
Used in data gathering

加盟店名
Midosuji Hotel
〒545-0043 大阪府大阪市淀川区

店番 Front 係員 17

カード会社 Visa/Master

カード番号 05207

有効期限 9903-09-15/12

ご利用日 09/04/24 14:44-24

会員番号 52040006502808

有効期限 13/06

処理番号 993743

取引内容 Sale

支払区分 Lump Sum

Trans Category 110

承認番号 260853

金額 ¥6,300

合計金額 ¥6,300

TOTAL YEN

CHEN SHANG

Customer Copy	CREDIT CARD SALES SLIP	R232
Company Name/Member No.	UC-XXXXXXXXXXXX2808	Has XX-XX
Transaction Details: Purchase	Payment type: Lump Sum	¥14,050

Product Name: Reserved seat ticket 1 tickets (book)
Apr. 24th Nozomi 219 Shinagawa→Shin-Osaka passenger ticket included
Refunds are handled only at JR Tokai ticket windows that accept cards.
We do not give cash refunds.
Please retain this slip.
4/24/09 60720-04 Issued at Shinagawa Station MR922

Thank you for your patronage.

Please come again.

Receipt 1st No.

Mrs./Mr./Ms.

Amount Yen 7,139.0

Revenue Stamp

Commuter Pass

Compass Card

Commuter Tickets

Normal Tickets ☒ Express/Reserved Seat Ticket

Group Tickets ☐ Service Pack Ticket

Received as above
4/25/2009

Nankai Electric Railway Co.
Namba Sales Office

※この票は、金額を訂正したものと取替券または清算用紙のいずれもは有効です。

CONFIDENTIAL

Q000010066PCT

CERTIFICATE OF TRANSLATION ACCURACY

State of California

November 5, 2013

Country of USA

I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English Q000010063, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.

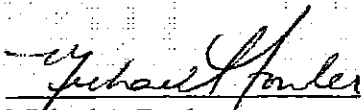

Michael A. Fowler

EXHIBIT 15

From: shi-chi.ho Ho Shi-Chi <Shi-Chi.ho@qsitw.com>
Subject: RE: [OWN] CQ4 pricing proposal
To: haw.chen Chen Shang-Hao
Date: Thu, 25 Sep 2008 05:11:43 +0000

Haw,

I will have a chat with Panasonic's President DongDong this afternoon.

If there is any useful information, I will pass to you.

Hos

From: haw [mailto:haw.chen@qsitw.com]
Sent: Wednesday, September 24, 2008 10:32 PM
To: shi-chi.ho Ho Shi-Chi
Subject: RE: [OWN] CQ4 pricing proposal

Dear Hos,

Let me summarize some crazy quotation from our competitors.

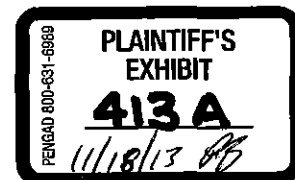
1. TSST is quoting \$25 even lower everywhere, for VOL, MSI, OWN.
2. HLDS quoting \$25 for FIC. For VOL, they are waiting for others quotation.
3. PCC \$25 for OWN, \$25.x to NEO for Q1. (we need to find out why PCC is becoming so aggressive even in NEO. They used to be aggressive in OWN.)

I believe TSST triggered the price battle in 2nd tier customers, from which usually their share is very limited. HLDS is joining the game. It's strange that PCC hasn't given up.

Thanks,

Haw

From: Phoebe.Chu Chu Chin-Yi [mailto:Phoebe.Chu@qsitw.com]
Sent: Wednesday, September 24, 2008 5:58 PM
To: Sally.huang Huang Ya-Ping; Shu-ming.Tzeng Tzeng Shu-Ming; haw.chen Chen Shang-Hao
Subject: [OWN] CQ4 pricing proposal



Dear all,

Here's the CQ4 price proposal for OWN.

- I BenQ will change the biz model to buy/sell from Oct/1 and it's only for new SATA projects in OWN. For old PATA platforms, OWN will remain the purchase power. The ramp-up volume is 6~8K in Oct. The CQ4 pricing is \$26.5 which I've offered to BenQ on 9/22.
- I OWN whitebox (excludes BenQ new projects) DVDRW TAM is 40K/SMD and 15K/LS (for TOP). Definitely we'll share 100% allocation for TOP service demands. However for OWN WB, other suppliers offer very aggressive price to OWN. PCC offers \$25.0 for SMD and TSST offers \$24.X at CQ4.
- I I'd like to offer \$25.5/SMD and \$26.8/LS at CQ4 as 1st quote and target to get majority shares. I will negotiate with OWN to keep this pricing offer as much I can.

Please refer to attached P&L analysis and kindly comment if any.

Regards,

Phoebe Chu

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1110

TW Mobile: +886-955539737

CERTIFICATE OF TRANSLATION ACCURACY

State of California

October 29, 2013

Country of USA

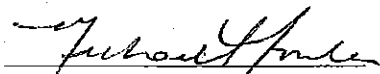
I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00032277, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.



Michael A. Fowler

EXHIBIT 16

From: shi-chi.ho 何世池 <MAILER-DAEMON>
Subject: RE: [OWN] CQ4 pricing proposal
To: haw.chen 陳尚昊
Date: Thu, 25 Sep 2008 08:29:33 +0000
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
INC./OU=QMATEMAIL/CN=RECIPIENTS/CN=SHI-CHI.HO

Dear Haw,

1. What I got was OWN asked PCC to quote under \$25 because QSI price is under \$25.

PCC will quote \$25 for OWN.

2. NEO was quoted by Japan side. PCC only ships around 300K~400K/M 12.7mm tray DVD-RW now because cost is not competitive.

Hos

From: haw [mailto:haw.chen@qsitw.com]
Sent: Wednesday, September 24, 2008 10:32 PM
To: shi-chi.ho 何世池
Subject: RE: [OWN] CQ4 pricing proposal

Dear Hos,

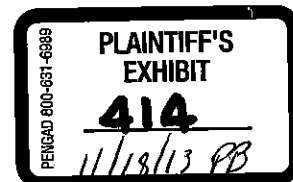
Let me summarize some crazy quotation from our competitors.

1. TSST is quoting \$25 even lower everywhere, for VOL, MSI, OWN.
2. HLDS quoting \$25 for FIC. For VOL, they are waiting for others quotation.
3. PCC \$25 for OWN, \$25.x to NEO for Q1. (we need to find out why PCC is becoming so aggressive even in NEO. They used to be aggressive in OWN.)

I believe TSST triggered the price battle in 2nd tier customers, from which usually their share is very limited. HLDS is joining the game. It's strange that PCC hasn't given up.

Thanks,

Haw



QUANTA_HAW176035**Metadata**

Atttitle	5834	ORIGINAL
Company	Quanta	ORIGINAL
Custdian	Chen, Haw	ORIGINAL
Docdate	09/25/2008 01:29:33 -0700	ORIGINAL
Docid	QUANTA_HAW_00032401	ORIGINAL
DocType	Message	ORIGINAL
Filepath	haw0808/0808//5834	ORIGINAL
FolderID	haw0808	ORIGINAL
From	shi-chi.ho <MAILER-DAEMON>	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	7d384c41bf942944ca74aa8d1e79d794	ORIGINAL
Lang	English	ORIGINAL
Pgcount	1	ORIGINAL
Subject	RE: [OWN] CQ4 pricing proposal	ORIGINAL
To	haw.chen	ORIGINAL

EXHIBIT 17

From: Sally.huang Huang Ya-Ping <MAILER-DAEMON>
Subject: Price manipulation of TFT LCD Panel Official Judgment imposed on LG Display in the amount of \$400 Million
To: caroline.lin Lin Chu-Tsu; evon.yu Yu Yi-Feng; gina.liu Liu Chia-Feng; Kathy.ji Ji Shao-Min; kirsty.peng; Phoebe.Chu Chu Chin-Yi; sarah.tseng Tseng Yong-Lan; Shuming.Tzeng Tzeng Shu-Ming
Cc: shi-chi.ho Ho Shi-Chi; haw.chen Chen Shang-Hao
Date: Wed, 17 Dec 2008 06:36:03 +0000
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
NC/OU=QMATEMAIL/CN=RECIPIENTS/CN=SALLY.HUANG

Dear all sales:

You may have chance to meet our competitors, please make sure to NOT mention quotation/price when you have a talk with them.

Sally

Price manipulation of TFT LCD Panel Official Judgment imposed on LG Display in the amount of \$400 Million

Shen Wen-Yi/Associated Press

2008/12/17

According to a Dow Jones report, Korean LG Display, Sharp Japan, and Taiwanese company Chunghwa Picture Tubes Ltd. pled guilty to price manipulation of TFT LCD panels. On December 15, 2008, the US Department of Justice officially imposed a judgment against LG Display in the amount of \$400 million. On December 16, Sharp and Chunghwa Picture Tubes Ltd. were fined \$120 million and \$65 million respectively.

It is understood that the fine imposed in this matter is considered the second highest penalty in antitrust cases. In 2001-2006, the aforementioned companies were involved in price-fixing of LCD panels. Products affected include iPod (Apple), phone manufacturer Motorola's Razr, and LCD monitors and notebook computers (NB) from Dell. According to prosecutors, the effect on the consumer electronics market, using LCD panels, reached \$2.5 billion.

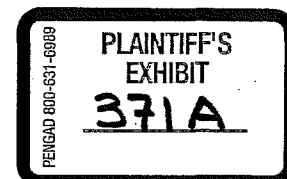
Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205



CERTIFICATE OF TRANSLATION ACCURACY

State of California

October 22, 2013


Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00047154, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 18

March 09, 2017

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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

_____)
IN RE: OPTICAL DISK DRIVE)
_____)
ANTITRUST LITIGATION) MDL No. 3:10-MD-2143 RS
_____)
_____)

VOLUME I
CONFIDENTIAL RESTRICTED
DEPOSITION OF QUANTA STORAGE, INC., DESIGNEE
SHU MING TZENG
Berkeley, California
Thursday, March 9, 2017

Reported by: LANA L. LOPER, RMR, CRR, CCP,
CME, CLR, CSR No. 9667

March 09, 2017

16

09:43 1 (Plaintiff's Exhibit 2122 was marked for
2 identification.)

3 THE WITNESS: Which one do I look at?

4 MS. SCARLETT: That one is for you, the
09:43 5 interpreter.

6 That one is for you, the official marked
7 exhibit.

8 THE WITNESS: Where shall I stop looking at?

9 BY MS. SCARLETT:

09:44 10 Q If you could just take a brief minute to review
11 this document.

12 My question is, do you recognize it?

13 A This document, our legal department has shown us
14 before.

09:44 15 Q And so you understand that you're the
16 representative from Quanta Storage who is here to testify
17 on the subject areas outlined in this deposition notice?

18 A Yes.

19 Q What did you do to prepare for your deposition
09:45 20 today?

21 A I have discussed the subject matters with our
22 attorney and, also, some questions regarding -- also
23 questions with him.

24 Q How long did you spend with your attorney
09:45 25 preparing for your deposition today?

Shu H. Zeng - Confidential
March 09, 2017

24

10:01 1 the Dell account from 2007 through the end of 2008?

2 A I'm not entirely sure of the exact time.

3 At the time, I may also have a supervisor above

4 me who was an account manager. I don't recall exactly

10:02 5 when I took over as the person responsible for the Dell

6 account. It's probably about 2009.

7 Q Is it correct that all division heads reported

8 to either Haw Chen or Dr. Shi-chi Ho during the 2003

9 through 2008 period?

10:03 10 A They are at the top, yes.

11 Q Does Haw Chen still work for Quanta Storage?

12 A Yes.

13 Q Does Sally Huang still work for Quanta Storage?

14 A Sally Huang?

10:03 15 There is no such person.

16 Q Does Shi-chi Ho still work for Quanta Storage?

17 A Yes.

18 Q Could you tell us what antitrust policies Quanta

19 Storage had in place from the 2003 through 2008 period?

10:04 20 MR. ENSON: Objection. Form.

21 THE WITNESS: As soon as we were recruited into

22 the company, we were given training to not reveal

23 business secrets to competitors or other companies in the

24 industry, unless we have contracts; unless we have

10:05 25 agreements, business agreements, with these other

Shu Hui Zeng, Confidential
March 09, 2017

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10:13 1 A That was -- that's how it was written, so I'm
2 just using those words.

3 Q So my question to you is, was it Quanta Storage
4 policy, during the 2003 through 2008 period, that its
10:14 5 employees were not to communicate with competitors?

6 MS. PALOZOLA: I'll object that it's vague.

7 THE WITNESS: It was not specific to this
8 period, 2003 to 2008. As soon as we were joined -- we
9 joined, that was the policy.

10:14 10 BY MS. SCARLETT:

11 Q So the policy at Quanta Storage has always been
12 that its employees are not to communicate with
13 competitors. Is that right?

14 MS. PALOZOLA: Objection. Vague.

10:15 15 THE WITNESS: Yes, it has always been that
16 employees are not to communicate with competitors.

17 BY MS. SCARLETT:

18 Q Did you, ma'am, communicate with competitors
19 between the years 2003 and 2008?

10:15 20 MS. PALOZOLA: Objection. Vague.

21 THE WITNESS: Competitors, no.

22 BY MS. SCARLETT:

23 Q It's your position that you never met with a
24 competitor of Quanta Storage to discuss the sales of
10:16 25 optical disk drives during the period 2003 to 2008?

Shu Hui Zeng - Confidential
March 09, 2017

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10:44 1 selling through Sony or PLDS or Pioneer. As to how they
2 sell to their customers, that has nothing to do with us.

3 BY MS. SCARLETT:

4 Q Was HLDS ever a customer of Quanta Storage?

10:45 5 A No.

6 Q Isn't it correct --

7 MS. PALOZOLA: Counsel, sorry, I didn't mean to
8 cut you off.

9 When you have a moment, can we take a break?

10:45 10 We've been going about an hour.

11 MS. SCARLETT: Sure.

12 BY MS. SCARLETT:

13 Q Isn't it correct that you also met with an
14 employee of HLDS?

10:45 15 A I think customers introduced us.

16 Q Isn't it correct, however, that you met with an
17 employee of HLDS outside the presence of a customer?

18 MS. PALOZOLA: Objection to form.

19 THE WITNESS: Yes. But customers connected us,
10:46 20 suggesting that we could discuss how to make
21 presentation.

22 BY MS. SCARLETT:

23 Q Was a customer present when you met with an
24 employee of HLDS in October of 2008?

10:46 25 A No.

March 09, 2017

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10:46 1 Q Do you recall what you discussed with the
2 meeting -- strike that.

3 Do you recall what you discussed at the meeting
4 with HLDS in October 2008?

10:46 5 A No. We were just eating together. They eat
6 early and we went to join them.

7 Q Do you recall who it was you met with from HLDS
8 in October 2008?

9 A Jerry. Jerry Hsieh, I remember.

10:47 10 Q Do you believe that Jerry Hsieh worked for HLDS?

11 MS. PALOZOLA: Object as to form.

12 THE WITNESS: No.

13 BY MS. SCARLETT:

14 Q Who did Jerry Hsieh work for?

10:47 15 A At that time, he should already be working for
16 PLDS.

17 Q Do you recall who it was you met with in October
18 2008 from HLDS?

19 A I don't remember that with time --

10:48 20 MS. PALOZOLA: Counsel, is now a good time to
21 take a break?

22 MS. SCARLETT: No, I'm not finished with my line
23 of questioning. When I am done, we can take a break.

24 MS. PALOZOLA: How much longer do you think?

10:48 25 MS. SCARLETT: When I'm done with my line of

Shun-Tzung Confirmed
March 09, 2017

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10:48 1 questioning, which should be another five, 10 minutes.

2 MS. PALOZOLA: I just have to use the restroom,
3 so that would be great if we can do that.

4 THE WITNESS: I don't remember that -- at that
10:48 5 time point, but just like I said earlier, customers
6 connected us to make presentations. I think it was
7 Bruce. But I don't remember the time point.

8 BY MS. SCARLETT:

9 Q Do you recall where it was you met with Bruce,
10:48 10 from HLDS, in October 2008?

11 A Taipei, near their office.

12 Q Do you recall if anyone else from HLDS attended
13 that meeting in October 2008?

14 A I don't remember. But I think -- I'm sure that
10:49 15 Bruce was present.

16 Q And do you recall what account Bruce, from HLDS,
17 was responsible for at HLDS?

18 A Acer, because Acer was the customer who
19 connected us.

10:49 20 Q And do you recall meeting with Bruce, from HLDS,
21 on any other occasion, other than in October 2008?

22 A I don't recall.

23 Q Did any employee of Quanta Storage discuss sales
24 of optical disk drives with Bruce, from HLDS, on any
10:50 25 other occasion, other than the lunch -- setting aside the

Shih H. Tseng - Confidential
March 09, 2017

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10:50 1 lunch in October of 2008?

2 MS. PALOZOLA: Objection as to form.

3 (Telephonic interruption.)

4 THE WITNESS: Was the question about any other

10:51 5 employees from HLDS or any other employees from us?

6 BY MS. SCARLETT:

7 Q Did any employees of Quanta Storage speak with
8 Bruce, from HLDS, regarding sales of optical disk drives,
9 other than the meeting in Taipei in October of 2008?

10:51 10 MS. PALOZOLA: Objection to form.

11 THE WITNESS: I don't know. I don't know,
12 because I'm not responsible for Acer.

13 BY MS. SCARLETT:

14 Q Yes, but you're here testifying as a corporate
10:51 15 representative.

16 So on behalf of the corporation, did any
17 employees of Quanta Storage meet with Bruce, from HLDS,
18 on any occasion other than the meeting in Taipei in
19 October of 2008?

10:52 20 MS. PALOZOLA: Same objections.

21 THE WITNESS: I don't know.

22 BY MS. SCARLETT:

23 Q Did you do anything to find out?

24 MS. PALOZOLA: Objection as to form.

10:52 25 THE WITNESS: Not to my knowledge.

Shun Li Zeng - Confidential
March 09, 2017

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11:22 1 that language to you, for you to understand the answer.

2 So if I may -- well, just for this, I will
3 answer what she said to you, just for this particular
4 matter, if you allow me to.

11:22 5 MS. SCARLETT: Please, go ahead.

6 MR. WANG: She said, the reason why she knew
7 this well, first of all, is that there are only few
8 occasions. And she was in charge of Dell account, so she
9 aware of all the events provided by Dell, and she gave
10 examples for last two occasions.

11 Those information can be looked up, because it
12 is held by Dell, and they invited all suppliers. So
13 that's why she list it out here, why they're all
14 suppliers over there.

11:23 15 (Speaking Chinese to witness.)

16 MS. SCARLETT: Can you read back to her my last
17 question?

18 (The question was read as follows:)

19 "Q Did you speak with any other
11:20 20 employees of Quanta Storage to find out
21 whether or not they spoke with
22 competitors before providing this
23 interrogatory response?"

24 THE WITNESS: Because now I'm the only employee.
11:23 25 Sally has left. And there are no other employees, so I'm

March 09, 2017

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11:24 1 the only one.

2 BY MS. SCARLETT:

3 Q Isn't it true that you earlier testified that
4 Haw Chen is still employed by the company?

11:24 5 A Other than Haw, I already listed them.

6 Q Did you speak with Haw Chen regarding his
7 communications with competitors prior to providing this
8 response to the plaintiffs?

9 MS. PALOZOLA: Object as to form.

11:24 10 THE WITNESS: Not to my knowledge.

11 BY MS. SCARLETT:

12 Q Did you review any documents or e-mails prior to
13 providing this response to the plaintiffs?

14 A Review documents?

11:25 15 I have read my communications. What other
16 documents?

17 Q Did you review the e-mails or communications of
18 any other Quanta Storage employee prior to providing this
19 discovery response to plaintiffs?

11:25 20 MS. PALOZOLA: Object as to form.

21 THE WITNESS: How do I review their e-mails,
22 unless I'm on their copy list?

23 BY MS. SCARLETT:

24 Q But you understand, when providing this
11:26 25 response, you were providing it on behalf of Quanta

March 09, 2017

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11:29 1 BY MS. SCARLETT:

2 Q Did Quanta Storage employees ever reach an
3 agreement with a competitor on bid position?

4 MS. PALOZOLA: Object as to form.

11:29 5 THE WITNESS: Not to my knowledge.

6 BY MS. SCARLETT:

7 Q And what did you do to investigate this?

8 A To my knowledge, investigating was not needed.

9 Q Why is it that investigating was not needed?

11:30 10 MS. PALOZOLA: Object as to form.

11 THE WITNESS: Because to my knowledge,
12 nothing -- because everyone was trained, starting when
13 they joined the company, not to discuss with competitors.

14 BY MS. SCARLETT:

11:31 15 Q So if Quanta did reach an agreement with a
16 competitor regarding bid position for optical disk drives
17 in a procurement event, that would have been a violation
18 of Quanta Storage's policy?

19 MS. PALOZOLA: Objection as to form and calls
11:31 20 for a legal conclusion.

21 THE WITNESS: Do I need to answer this?

22 MS. SCARLETT: Yes.

23 MS. PALOZOLA: Can you repeat the question?

24 (The question was read as follows:)

11:31 25 "Q So if Quanta did reach an agreement

Shun-Tzung Confirmed
March 09, 2017

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12:05 1 this up with Dell, and we needed to do comparison between
2 the old T&C and the new T&C.

3 Q And so when Anita Yin wrote, "In the meantime,
4 could you please call up all suppliers' account managers
12:06 5 to against this," she meant, call up the supply account
6 managers to try and resist the new unilateral T&C
7 amendments. Is that right?

8 MS. PALOZOLA: Objection as to form.

9 THE WITNESS: That appears to be what's going on
12:06 10 here. But whether this actually happened, I don't know
11 anything about it at all.

12 And also, to bring this up with the customers, I
13 don't see anything wrong with it.

14 BY MS. SCARLETT:

12:07 15 Q So when she writes, "I already called Lite-On
16 and asked them to against IEC as well also," she meant
17 she had already called Lite-On and asked them to go
18 against these IEC unilateral T&C amendments that were
19 very disadvantageous to Quanta. Is that right?

12:07 20 MS. PALOZOLA: Objection as to form.

21 THE WITNESS: That's what it states here, but I
22 don't have personal knowledge.

23 BY MS. SCARLETT:

24 Q You're one of the recipients of this e-mail,
12:07 25 aren't you?

Sanjiv Zang - Confidential
March 09, 2017

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02:24 1 BY MS. SCARLETT:

2 Q Can you tell us what you understand the word
3 "consensus" to mean?

4 MS. PALOZOLA: Same objection.

02:24 5 THE WITNESS: You agree with my position and we
6 agree to do something. You agree to what I say and, to a
7 certain extent, you agree to do accordingly.

8 BY MS. SCARLETT:

9 Q Is it correct that in October of 2008, Quanta
02:25 10 Storage reached a consensus with other suppliers not to
11 lower the price for drives being sold to HP?

12 MS. PALOZOLA: Object to form.

13 THE WITNESS: I don't know about this.

14 MS. SCARLETT: I would like to show the witness
02:26 15 an exhibit previously marked as 393.

16 (Plaintiff's Exhibit 393 was previously
17 marked for identification.)

18 THE WITNESS: Okay.

19 BY MS. SCARLETT:

02:29 20 Q This is an e-mail from Haw Chen of Quanta
21 Storage, dated October 24, 2008. Isn't that right?

22 A That appears to be the case.

23 Q Can you turn to the third page of the document?

24 This is an e-mail from Caroline Lin, of Quanta
02:30 25 Storage. Is that correct?

Shu H. Tseng - Confidential
March 09, 2017

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05:19 1 In February of 2008, Haw Chen had at least one
2 more conversation with Jerry Hsieh, of PLDS, regarding
3 bidding intentions in a Dell auction. Isn't that right?

4 MS. PALOZOLA: Object to form.

05:20 5 THE WITNESS: I don't have recollection.

6 BY MS. SCARLETT:

7 Q Did you ask Haw Chen if he had telephone
8 conversations with Jerry Hsieh, of PLDS, where nobody
9 else was on the phone?

05:20 10 MS. PALOZOLA: Object to form.

11 THE WITNESS: Usually, I don't need to ask him.
12 If they talk about something important, he would tell me.

13 BY MS. SCARLETT:

14 Q In preparing for your deposition today as the
05:21 15 corporate representative of Quanta Storage, did you speak
16 with Haw Chen and ask him about his conversations with
17 Jerry Hsieh?

18 MS. PALOZOLA: Object to form.

19 THE WITNESS: I didn't specifically ask him
05:21 20 about it.

21 BY MS. SCARLETT:

22 Q In preparing the table of meetings that's marked
23 as Exhibit 2123, and that you verified under penalty of
24 perjury, did you review the deposition exhibits that have
05:22 25 been used in this case today?

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05:31 1 And also, I feel my -- I'm drawing a blank right
2 now.

3 BY MS. SCARLETT:

4 Q Let me ask a different question.

05:31 5 When you prepared the table that's in
6 Exhibit 2123, did you review anything to help you with
7 your response, or did you simply rely on your memory?

8 MS. PALOZOLA: Object to form.

9 THE WITNESS: I did review things and look
05:32 10 things up. Otherwise, these dates would not have been so
11 exact.

12 And also, since this has been so long ago, it's
13 hard to look up information. Many of the notebooks are
14 no longer in commission. So I just tried my best to look
05:32 15 up information since 2007. And whatever I can remember,
16 I did my best to review.

17 BY MS. SCARLETT:

18 Q You understand that three Quanta witnesses have
19 been deposed in this case, right?

05:33 20 MS. PALOZOLA: Object to form.

21 THE WITNESS: Which three?

22 BY MS. SCARLETT:

23 Q Were you one of the witnesses previously
24 deposed?

05:33 25 MS. PALOZOLA: Object to form.

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05:33 1 If you know the answer.

2 MR. WANG: (Inaudible.)

3 THE WITNESS: I'm not quite sure exactly what
4 you're referring. Last time, we did have three people
05:33 5 who swore at something.

6 Are we talking about the DPP case?

7 BY MS. SCARLETT:

8 Q No, it was in the IPP case as well.

9 A Is it the time that we went to Taipei, this
05:34 10 time?

11 Q Do you remember asking (sic) questions in
12 response to plaintiff's counsel in this case previously?

13 A We did ask questions (sic), and per attorney's
14 advice, based on U.S. constitution, we refused to --

05:35 15 MS. PALOZOLA: I just want to tell the witness,
16 anything that is attorney-client privilege should not be
17 discussed, so -- so to translate to her any communication
18 she had with her attorney, she can't talk about.

19 THE WITNESS: Following our attorney's advice,
05:35 20 we refused to answer, based on U.S. constitution.

21 (English) Fifth Amendment.

22 MS. PALOZOLA: Move to strike. Calls for
23 privileged communication.

24 MS. SCARLETT: It's a deposition where, in
05:35 25 response to every question, they literally said --

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05:35 1 (Overtalking.)

2 MS. PALOZOLA: I wasn't at that deposition. I'm

3 making my objections to the best of my ability.

4 Thank you.

05:35 5 BY MS. SCARLETT:

6 Q So at those depositions, the plaintiffs

7 introduced exhibits.

8 Do you recall that?

9 A Too many exhibits, I don't remember. Many

05:36 10 exhibits.

11 Q Did you review any of those exhibits in

12 preparing the response that we have now in Exhibit 2123?

13 MS. PALOZOLA: Objection. Form.

14 THE WITNESS: All those documents were collected

05:36 15 away, so I didn't have anything to review to prepare.

16 MS. SCARLETT: I would like to show the witness

17 Exhibit 378 and 378A.

18 (Plaintiff's Exhibit 378 was previously

19 marked for identification.)

05:37 20 (Plaintiff's Exhibit 378A was previously

21 marked for identification.)

22 BY MS. SCARLETT:

23 Q Looking at the second e-mail on the first page,

24 is this an e-mail from Haw Chen, dated February 15, 2008?

05:40 25 A Yes.

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05:40 1 Q This relates to a February 18, 2008, Dell IN.

2 Is that right?

3 A Yes.

4 Q And you're one of the recipients of this e-mail?

05:41 5 A The bottom one, yes, dated February 15.

6 Q And this is from your boss's boss, Haw Chen. Is
7 that right?

8 A Yes.

9 Q Can you look at the second page of this e-mail?

05:41 10 Do you see where Haw Chen writes, "competitor
11 status"?

12 A Yes.

13 Q Under the first point, Haw Chen writes, "TSST
14 also mentioned that first place will definitely face COS
05:42 15 issue."

16 Do you see that?

17 A COS.

18 (English) Supply.

19 Yes.

05:42 20 Q Did Haw Chen speak with someone at TSST?

21 MS. PALOZOLA: Objection to form.

22 THE WITNESS: No. In my recollection, this TSST
23 and COS issue were from the customers.

24 BY MS. SCARLETT:

05:43 25 Q So when he writes, "TSST also mentioned," you're

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05:43 1 suggesting that this information came from Dell?

2 MS. PALOZOLA: Object to form.

3 THE WITNESS: Yes.

4 BY MS. SCARLETT:

05:43 5 Q Did you ask Haw Chen whether or not the
6 information contained in point 1 came from Dell?

7 A Because he told me that our customer Alex talked
8 about this.

9 Q When did he tell you that?

05:43 10 A I don't remember, but I discussed was that -- he
11 disclosed to us that TSST and HLDS may not be very
12 aggressive.

13 Q So it's your testimony that when Haw Chen wrote,
14 "HLDS even not so aggressive to get No. 2, they said if
05:44 15 possible (pricing is not too bloody) they have intention
16 to get No. 2," it's your testimony that information was
17 provided by Dell?

18 MS. PALOZOLA: Object to form.

19 THE WITNESS: Yes.

05:44 20 BY MS. SCARLETT:

21 Q And do you recall when it was that Haw Chen told
22 you that Dell told him HLDS's bidding intentions?

23 MS. PALOZOLA: Object to form.

24 THE WITNESS: I don't recall exactly when. But

05:45 25 I know that the customers told him then -- this was 2008,

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05:45 1 right?

2 You could -- you can glean from this the big
3 shortage situation.

4 BY MS. SCARLETT:

05:45 5 Q Looking at point 3, Haw Chen writes, "Jerry said
6 that he must obtain one of the last two positions (two to
7 three weeks ago they quoted 0.1 lower than March similar
8 to us.) I believe in last RFQ, nobody really reduced.
9 Therefore, we are having this April IN."

05:46 10 Do you see that?

11 MS. SCARLETT: Counsel, I would ask you not to
12 direct her to parts of the document when I'm questioning
13 her.

14 MR. WANG: Well, this is translated document.

05:46 15 She's looking at translated document, instead of
16 essential document, in which there's Chinese; she can
17 read it easily. So sorry to interrupt.

18 MS. PALOZOLA: That's fine, if she can't read
19 it.

05:47 20 MR. WANG: Just a second.

21 (Speaking Chinese to witness.)

22 THE WITNESS: Can you repeat your question?

23 BY MS. SCARLETT:

05:47 24 Q Do you see that portion that I just read that
25 starts with "Jerry"?

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05:47 1 A Yes.

2 Q Was Haw Chen reporting on information that he
3 had gained from Jerry Hsieh, of PLDS?

4 MS. PALOZOLA: Object to form.

05:48 5 THE WITNESS: Yes, this is what Jerry stated to
6 him.

7 BY MS. SCARLETT:

8 Q Jerry Hsieh, of PLDS, right?

9 A Yes.

05:48 10 Q Did you ask Haw Chen about his conversation with
11 Jerry Hsieh, of PLDS, in February of 2008?

12 A I don't have such recollection.

13 Q And you did not include this communication
14 between Haw Chen and Jerry Hsieh, of PLDS, in the
05:49 15 response that you provided to plaintiffs in Exhibit 2123,
16 did you?

17 A No, I did not.

18 Q Are you aware of Quanta Storage employees
19 discussing bidding intentions with employees of TSST?

05:49 20 MS. PALOZOLA: Object to form.

21 THE WITNESS: Quanta and TSST? No, I'm not.

22 BY MS. SCARLETT:

23 Q Did you ever ask Sally Huang -- strike that.

24 Did you ever speak to Sally Huang about whether
05:50 25 or not she had conversations with TSST?

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05:50 1 A I think so, because this one I listed, I think
2 it's TSST.

3 Q By "this one," what are you referring to?

4 MR. CAMPBELL: Object to form.

05:50 5 THE WITNESS: The line seems to be poorly
6 placed. Yusun Tango, Y-u-s-u-n, Yusun Tango.

7 BY MS. SCARLETT:

8 Q You're referring to the December 12, 2008,
9 market information-sharing meeting between Yusun Tango

05:51 10 Lin and QSI Sally and Evan. Is that right?

11 MR. CAMPBELL: Object to form.

12 THE WITNESS: Yes.

13 BY MS. SCARLETT:

14 Q Are you aware whether Sally Huang spoke with
05:51 15 employees of TSST prior to that December 12, 2008,
16 meeting in Taipei?

17 MS. PALOZOLA: Object to form.

18 THE WITNESS: No recollection.

19 MS. SCARLETT: I would like to show the witness

05:52 20 Exhibit 377.

21 (Plaintiff's Exhibit 377 was previously
22 marked for identification.)

23 BY MS. SCARLETT:

24 Q Do you see the e-mail on the second page from
05:53 25 Sally Huang, dated April 4, 2008?

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05:53 1 A Yes.

2 Q And she writes, "Dear All, we don't want to be
3 aggressive for this run since TSST is not willing to be
4 aggressive for this portion RFQ, Sally."

05:53 5 Do you see that?

6 A Yes.

7 Q Did Sally Huang speak with someone at TSST to
8 get this information?

9 MS. PALOZOLA: Object to form.

05:54 10 THE WITNESS: I don't know. But like I said --
11 but like I said, we could obtain information about
12 suppliers' bidding intentions from customers.

13 BY MS. SCARLETT:

14 Q Did you ask Haw Chen, who is a recipient of this
05:54 15 e-mail, where the aggressiveness intentions of TSST --
16 strike that.

17 Did you ask Haw Chen, who is a recipient of this
18 e-mail, where Sally Huang found out the bidding
19 intentions of TSST?

05:54 20 MS. PALOZOLA: Objection to form.

21 THE WITNESS: No. I wasn't on the cc list here,
22 copy list here, so I didn't -- I would not have been able
23 to ask.

24 BY MS. SCARLETT:

05:55 25 Q You are here testifying as a corporate

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05:55 1 representative of Quanta Storage.

2 Preparing for your deposition today, did you ask
3 Haw Chen about any conversations that may have happened
4 between Sally Huang and TSST?

05:55 5 MS. PALOZOLA: Object to form.

6 THE WITNESS: No, because I didn't know about
7 this one. And also, this information did not necessarily
8 have to come from TSST.

9 BY MS. SCARLETT:

05:56 10 Q As you sit here today, do you have any
11 information about where this statement, saying, "We don't
12 want to be aggressive for this run, since TSST is not
13 willing to be aggressive for this portion RFQ," came
14 from?

05:56 15 MS. PALOZOLA: Object to form.

16 THE WITNESS: No.

17 BY MS. SCARLETT:

18 Q And you did not include this communication
19 between QSI and TSST in the interrogatory response marked
05:56 20 as 2123, did you?

21 MS. PALOZOLA: Object to form.

22 THE WITNESS: Because this doesn't have to come
23 from TSST. It could come from customers, so why do I
24 have to include this?

25 / / / /

1 STATE OF CALIFORNIA)
2)
3 COUNTY OF SAN FRANCISCO)
4

5 I, Lana L. Loper, a Certified Shorthand
6 Reporter, do hereby certify:

7 That prior to being examined, the witness in
8 the foregoing proceedings was by me duly sworn to
9 testify to the truth, the whole truth, and nothing but
10 the truth;

11 That said proceedings were taken before me at
12 the time and place therein set forth and were taken down
13 by me in shorthand and thereafter transcribed into
14 typewriting under my direction and supervision;

15 I further certify that, pursuant to FCRP Rule
16 30(e)(1), the review and signature by the witness:

17 ___ was requested by the deponent or a
18 party before the conclusion of the
19 deposition;

20 _x_ was not requested by the deponent
21 or a party before the conclusion of the
22 deposition;

23 I further certify that I am neither counsel
24 for, nor related to, any party to said proceedings, nor
25 in anywise interested in the outcome thereof.

March 09, 2017

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1 In witness whereof, I have hereunto subscribed
2 my name.

3
4 Dated: March 23, 2017

A handwritten signature in dark ink, appearing to be "Lana L. Loper", written over a horizontal line.

5
6
7 LANA L. LOPER, RMR, CRR, CCP, CME, CLR, CSR 9667

EXHIBIT 19

From: Shu-ming.Tzeng 曾淑明
Sent: 3/13/2008 10:50:32 AM
To: 'Chng, Vincent' [Vincent.Chng@ap.sony.com]; Amino, Masafumi (Optiarc) [masafumi.amino@jp.sonyec-optiarc.com]; haw.chen 陳尚昊 [haw.chen@qsitw.com]
CC: Anita.Yin 陰家恩 [Anita.Yin@qsitw.com]; Sato, Tomio [Tomio.Sato@jp.sonyec-optiarc.com]; Mikami, Junsuke [Junsuke.Mikami@jp.sonyec-optiarc.com]; sarah.tseng 曾詠嵐 [sarah.tseng@qsitw.com]
Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hello Vincent,

Thanks for hard working on dealing with Alex!

For Combo, our price for Mar is USD21.30 & got 35% TAM. We doubt that we're at the last position by offering USD21.23.

We have more economic scale producing this model than competitors & still hard to cost down any further.

If Dell award to us 5% for Q2 only, we'll think about EOL this model CRX880A as well.

Anyway, could you please help to gather more information from other competitors?

For RW, we will keep the same price USD25.48 for AD-5560A as EOL price but we could support USD25.10 for AD-7580A till EOL in FY10.

By the way, I had a conversation with PLDS sales yesterday. They said "the TAM for 12.7 tray SATA is just 20~30K/M as of today & don't think that the project

Fleming (the re-flashed model, for desktop) will have 100K/M. Do you think Dell needs 3 or 4 suppliers to support just 100K~150K biz of 12.7mm Tray PATA?"

That reminds me one thing, maybe that's the reason why Dell don't want to announce the RFQ result of 12.7mm Tray SATA.

I'm wondering maybe there's no slot for 12.7mm SATA for their engineering source constraints. That means no one will be selected for Q3 slot until next Q1.

That's just my thought. What do you think?

For Slot, we still keep same price USD36.00 for Q2.

Should you have any question, just let me know!

Regards,

Quanta Storage Inc.

Shu-ming.Tzeng

Sales & Marketing Div.

Tel:886-3-3288090 ext.1108

Fax:886-3-3277500

E-mail: shu-ming.tzeng@qsitw.com

Address: 4F NO.188, Wen Hua 2nd Rd., Kuei Shen Hsiang,
Tao Yuan Shien, Taiwan

From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]

Sent: Thursday, March 13, 2008 4:18 PM

To: Amino, Masafumi (Optiarc); haw.chen 陳尚昊; Shu-ming.Tzeng 曾淑明

Cc: Anita.Yin 陰家恩; Sato, Tomio; Mikami, Junsuke; sarah.tseng 曾詠嵐

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hi All,



I would like to update on Alex's comment/counter proposal to our price offering to close Q2 TAM.

<Slim DVD/Combo>

Alex mentioned that based on \$21.23, we are currently now in the 4th position and also with the highest Bare Drive/Assembly cost.

He informed that all other suppliers have made a move to go beyond \$21 (Including TEAC) and based on current pricing, the most we can get is maybe 5% TAM.

<Slim DVDRW>

Alex understand our current situation but mentioned that he is disappointed at our price proposal for the PATA Tray and mentioned that we should re-consider our price offer to at least secure PATA tray refresh such that we still have the opportunity for a SATA tray biz award in the future.

He is now proposing whether we can apply \$25.10 as Q2 pricing for both AD-5560A and AD-7580A and that he will allow us to keep this pricing until EOL in FY10. If we are agreeable to this, he will confirm the PATA Tray refresh qualification slot for Optiarc/QSI.

<Slim Slot DVDRW>

Alex is requesting whether we can support him with an average pricing of USD35 for AD7640A/S instead of USD36.

His idea is as follows:

Model	Apr 08	May 08	Jun 08	Jul 08
AD-7640A/S	\$37.00	\$36.00	\$35.00	\$34.00

He mentioned that since we are able to support the special deal at \$34.00, he is hoping to keep a \$1.00 price gap for Jun.

From this request, I don't really feel that it is a strong request but more like whether we can further support him. Personally, I feel that \$36 should be acceptable to him.

Shu-ming/Haw-san: Would appreciate your comments/views on the above.

Thanks & Regards,
Vincent

From: Amino, Masafumi [mailto:Masafumi.Amino@jp.sonyec-optiarc.com]

Sent: 11 March, 2008 6:26 PM

To: haw.chen@qsitw.com; Shu-ming.Tzeng@qsitw.com; Chng, Vincent

Cc: Anita.Yin@qsitw.com; Sato, Tomio; Mikami, Junsuke; sarah.tseng@qsitw.com

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Yes, we have the same understanding.

From: haw.chen@qsitw.com [mailto:haw.chen@qsitw.com]

Sent: Tuesday, March 11, 2008 7:24 PM

To: Amino, Masafumi; Shu-ming.Tzeng@qsitw.com; Vincent.Chng@ap.sony.com

Cc: Anita.Yin@qsitw.com; Sato, Tomio; Mikami, Junsuke; sarah.tseng@qsitw.com

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Yes, but if SATA is not selected, PATA won't need to follow RFQ price for CQ3.

From: Amino, Masafumi [mailto:Masafumi.Amino@jp.sonyec-optiarc.com]

Sent: Tuesday, March 11, 2008 6:15 PM

To: Shu-ming.Tzeng 曾淑明; Vincent.Chng@ap.sony.com; haw.chen 陳尚昊

Cc: Anita.Yin 陰家恩; Sato, Tomio; Mikami, Junsuke; sarah.tseng 曾詠嵐

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Haw-san,

Following is to confirm our discussion.

12.7mm Tray PATA only \$25.10 flat FY2Q~ (too small volume)

12.7mm Tray PATA + SATA FY2Q \$25.10
FY3Q~ RFQ Price

Regards,
Mas Amino

From: Shu-ming.Tzeng@qsitw.com [mailto:Shu-ming.Tzeng@qsitw.com]

Sent: Tuesday, March 11, 2008 5:49 PM

To: Vincent.Chng@ap.sony.com; haw.chen@qsitw.com

Cc: Anita.Yin@qsitw.com; Sato, Tomio; Mikami, Junsuke; Amino, Masafumi; sarah.tseng@qsitw.com

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Sorry, there's a typo!

Quanta Storage Inc.

Shu-ming.Tzeng

Sales & Marketing Div.

Tel:886-3-3288090 ext.1108

Fax:886-3-3277500

E-mail:shu-ming.tzeng@qsitw.com

Address: 4F NO.168, Wen Hua 2nd Rd., Kwei Shen Hsiang,
Tao Yuan Shien, Taiwan

From: Shu-ming.Tzeng 曾淑明

Sent: Tuesday, March 11, 2008 4:44 PM

To: 'Chng, Vincent'; haw.chen 陳尚昊

Cc: Anita.Yin 陰家恩; 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); sarah.tseng 曾詠嵐

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hello Vincent,

Sorry for keeping you wait!

As you know it very well, it's getting tougher & tougher for proposing any new biz at Dell.
After our internal discussion, we'd like to propose USD36.00 for AD-7640A/S from May~Jul.
We think that the slot PATA supportability of other competitors (PANA & TEAC) is not that good.
Besides, the RTS schedule of SATA new projects is by Jun timeframe. We expected the volume won't be ramp up until Jul.

As for the most tough thing is Tray type DVD RW, the price USD25.10 is our bottom line for re-flash model (AD-7580A) to propose to Dell as flat price(till Q4 this year). And we'd like to keep the same price USD25.48 for AD-5560A as EOL price.

Last, we have no choice to keep the same price USD21.30 for CRX880A till Q4 this year.

Please kindly let me know if you have any concerns or comments. Thank you so much!

Regards,

Quanta Storage Inc.

Shu-ming.Tzeng

Sales & Marketing Div.

Tel:886-3-3288090 ext.1108

Fax:886-3-3277500

E-mail:shu-ming.tzeng@qsitw.com

Address: 4F NO.188, Wen Hua 2nd Rd., Kuei Shen Hsiang,
Tao Yuan Shien, Taiwan

From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]

Sent: Tuesday, March 11, 2008 10:33 AM

To: Shu-ming.Tzeng 曾淑明; haw.chen 陳尚昊

Cc: Anita.Yin 陰家恩; 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc)

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Shu-ming/Haw-san,

Will appreciate your response on this as the dateline for our reply was supposed to be on 3/10.

If you have any further concern or questions, please let me know.

Thanks & Regards,

Vincent

From: Chng, Vincent

Sent: 10 March, 2008 9:13 PM

To: 'Shu-ming.Tzeng@qsitw.com'; 'haw.chen@qsitw.com'

Cc: 'Anita.Yin@qsitw.com'; 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc)

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hi Shu-ming/Haw-san,

Thanks for sharing the information regarding the price constraint on AD-7580A.

Understand that Alex's target price of USD24.00 is quite impossible to achieve and also on your concern that the volume for PATA tray DVDRW will be quite limited next year.

Based on your comments for the price proposal, I called Alex again and tried to get more information and to sound him out whether HLDS has provided any price offer to him.

The summary of the discussion as follows:

- Seems that HLDS has not provided any price offer to him and Alex is still requesting for his Target price of USD24.00 as informed earlier
- Alex advice that we should secure the PATA Tray DVDRW refresh slot as it will give Optiarc/QSI a chance for the SATA tray qualification in the future to allow us to continue supplying Tray DVDRW.
- Even though current Target price is aggressive, he feels that Optiarc/QSI should consider the advantage of being single source in FY10 for PATA and also the chance to introduce SATA tray DVDRW.
- The selection result for SATA Tray DVDRW RFQ is not official yet and it may be released in the next few days.

<12.7mm Slot DVDRW Price projection for Q2>

Alex is requesting for price projection of AD-7640A/S for Q2.

He highlighted that in Q2 timeframe, there will be 3 suppliers for 12.7mm Slot and he is now requesting Optiarc/QSI to review May/Jun/Jul price for him to assess whether an IN will be required.

His current idea for the price projection as follows:

Model	Apr 08	May 08	Jun 08	Jul 08
AD-7640A/S	\$37.00	\$35.00	\$34.00	\$33.00

Please advice the final confirmation price offer for the PATA tray DVDRW refresh/Slim Combo (Q2 price) and also the Q2 price projection for 12.7mm Slot DVDRW by tomorrow 3/11 morning. (Alex's request is to reply him by tonight but I told him that we might need more time)

Thanks & Regards,

Vincent

From: Chng, Vincent

Sent: 07 March, 2008 2:32 PM

To: Shu-ming.Tzeng@qsitw.com; haw.chen@qsitw.com

Cc: Anita.Yin@qsitw.com; Sato, Tomio; Mikami, Junsuke; Amino, Masafumi (Optiarc)

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hi Shu-ming/Haw-san,

As per informed yesterday, please find below the summary of the discussion with Alex Wu:

<Slim Combo Q2 TAM>

- Alex is proposing to all supplier for a flat price until FY09 Q2.

- His target price is USD20.00 for bare drive and this price will secure min. 20% TAM until end of Q4.
- The TAM Share % will increase depending on the cost adder revision by suppliers.

<Slim DVDRW PATA Tray Q2 TAM>

- Alex is also proposing flat price for PATA drive until FY09 Q2.
- I have discussed with him on how we want to fix the Q2 TAM and also the plan for the refresh drive.
- According to the refresh drive schedule we provided, the shipping will be in Jul 08
- The idea during discussion is that we keep to \$25.48 for May/Jun requesting for min 10% and to launch the refresh drive in Jul with price of \$24.80 securing min. 10% TAM or more depending on the outcome of his discussion with the rest of the suppliers.
- For Q3 onwards, he is proposing us to consider a flat price of US\$24.00 until end of Q4. Since his expectation is that there will only be a single supplier for PATA tray from FY10 Q1 onwards, his expectation is that there will not be much price drop and the flat price of \$24.00 can remain until EOL.

Alex's wish is that we can agree to both the proposal for Combo/DVDRW but I personally feel that he is trying to leverage on the PATA DVDRW situation with the Combo. My personal opinion is that we should focus and consider on the PATA refresh proposal and to try to secure the refresh drive slot as it seem the chance is quite high. Although his proposed price is very aggressive, we should consider that it will be a flat price until EOL and we should consider a better price than USD24.80 if we really want to keep the tray business going and to also have a chance to secure the SATA Tray biz in the future should we not be selected in the RFQ.

<PATA/SATA Tray consideration>

In the discussion, I gave him the idea that the chance of providing better price support will be higher if he is able to award us both the Tray SATA and Tray PATA business. Alex commented that he understand our situation and he too wants to award us the SATA Tray. However, according to him, he mentioned that the decision for the TRAY SATA RFQ is currently beyond him and it's more like a top management decision now.

Another factor that he mentioned is due to Engineering resource issue at Dell, as initially, Dell's planning was more to focus on M09 platform (Slot loads) and 9.5mm in FY09. When the management realize that there is still a very big and potential biz from emerging market, they tried to shift the focus back to 12.7mm tray as it currently the cheapest and most viable option for price conscious market which is the case for emerging market. However, as the Q3/4 APP is very limited (They only have 60 complexity points per Quarter), it is not possible for them to squeeze in 2 qualification slot for Tray SATA.

His recommendation is that we should take our chance by securing the Tray PATA refresh such that the qualification requirement for a SATA model will not be that high since base drive is the same. However, he feels that Q3 or Q4 will be very tight but he is quite sure that we will be awarded a FY10 Q1 slot for our SATA tray in the event we are not selected for the RFQ. His reasoning is that Optiarc/QSI will be in a better position to bargain for the qualification slot as we will most likely be the only supplier for PATA Tray DVDRW which Dell still requires the drive until FY10 Q3 due to Flemming platform.

It will also be easier for him to propose to the management as they will now have to consider the COS risk if Optiarc/QSI decides to end PATA Tray supply.

The due date for the reply is by Monday 3/10.

Will appreciate if you can advice on this and the action for our reply on Monday.

Thanks & Regards,
Vincent

From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]

Sent: Wednesday, March 05, 2008 11:19 AM

To: 'Shu-ming.Tzeng@qsitw.com'

Cc: haw.chen@qsitw.com; Anita.Yin@qsitw.com; Okawa, Yoshihisa; Suzuki, Hideaki (Hide); Sato, Tomio; Mikami, Junsuke; Amino, Masafumi; Williams, Kris; emmy.chu@qsitw.com; Hiko.lin@qsitw.com; sarah.tseng@qsitw.com; Eric.Chen@qsitw.com

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hi Shu-ming,

Yes. We are fine with starting the con-call at 4:30pm.

Please use the dial in number provided in the earlier email.

As a summary, please find the agenda for the discussion

- Schedule/Potential Risk of launching AD-7580A in Q2
- Price proposal to Alex Wu for Q2 Slim DVDRW TAM
- BOM cost information of Slim Combo / Price proposal to Alex to lock Q2 Slim Combo TAM.

Due to time constraint, will appreciate if you can prepare sufficient information prior to the con-call such that I can follow up with Alex after the meeting as he is requesting to have the information by today.

Let me know if there are any questions.

Thanks & Regards,
Vincent

From: Shu-ming.Tzeng@qsitw.com [mailto:Shu-ming.Tzeng@qsitw.com]

Sent: 05 March, 2008 9:47 AM

To: Chng, Vincent

Cc: haw.chen@qsitw.com; Anita.Yin@qsitw.com; Yoshihisa.Okawa@jp.sonyec-optiarc.com; Hideaki.Suzuki@am.sonyec-optiarc.com; Tomio.Sato@jp.sonyec-optiarc.com; Junsuke.Mikami@jp.sonyec-optiarc.com; Amino, Masafumi (Optiarc); Kris.Williams@am.sonyec-optiarc.com; emmy.chu@qsitw.com; Hiko.lin@qsitw.com; sarah.tseng@qsitw.com; Eric.Chen@qsitw.com

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hello Vincent,

If the meeting is start from 2:00pm this morning, there'll be only Emmy & myself are available for the meeting.
Is that possible to postpone to 4:30pm? Thanks a lot!

Regards,

Quanta Storage Inc.

Shu-ming.Tzeng

Sales & Marketing Div.

Tel:886-3-3288090 ext.1108

Fax:886-3-3277500

E-mail:shu-ming.tzeng@qsitw.com

Address: 4F NO.188, Wen Hua 2nd Rd., Kwei Shen Hsiang,
Tao Yuan Shien, Taiwan

From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]

Sent: Wednesday, March 05, 2008 9:28 AM

To: Shu-ming.Tzeng 曾淑明

Cc: haw.chen 陳尚昊; Anita.Yin 陰家恩; 'Okawa, Yoshihisa'; 'Suzuki, Hideaki (Hide)'; 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); 'Kris.Williams@am.sonyec-optiarc.com'

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Shu-ming,

As per informed, we would like to have a con-call meeting to discuss on the AD-7580A introduction to Dell to elevate current price situation of AD-5560A.

In this meeting, we would like to discuss on the schedule/potential risk/pricing of launching AD-7580A in the event Dell is considering emergency Q2 qualification slot.

Understand that you need time to discuss internally on this and have requested for the meeting to be in the afternoon.

Tentatively, I would like to propose the meeting time as follows:

Date: 3/5 Wed

Time: 2:00pm (SIN/TWN)

Dial in no: +65 6668 7508

Passcode: 703815

Copy to All: Please advice if this time is ok with everyone.

Thanks & Regards,

Vincent

From: Chng, Vincent

Sent: 04 March, 2008 4:31 PM

To: 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); 'Kris.Williams@am.sonyec-optiarc.com'; 'Shu-ming.Tzeng@qsitw.com'; 'haw.chen@qsitw.com'; 'Anita.Yin ???'

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hi All,

Thank you for taking time to join this morning IN.

Unfortunately, due to severe price competition, we were not able to secure any TAM confirmation from the IN.

As per our discussion, we need to provide the following to Alex to negotiate offline for the remaining 20% TAM

- Schedule/potential/risk of launching AD-7580A (Refresh model) in Q2
- Proposal for Q2 pricing for offline negotiation

Per requested by Alex, he is expecting us to get back to him by 3/5 (Wed).

Please let me know if there are any questions.

Thanks & Regards,
Vincent

From: Chng, Vincent

Sent: 03 March, 2008 4:28 PM

To: 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); 'Kris.Williams@am.sonyec-optiarc.com'; 'Shu-ming.Tzeng@qsitw.com'; 'haw.chen@qsitw.com'

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Team,

Sorry, forgot 1 thing.

To access the IN page (Ariba Spend Management), please use the following url:

<https://esourcing.dell.com/Sourcing/jsp/en/trader/market/EventDetail.jsp?passwordadapter=SourcingSupplierUser&marketId=233001>.

ID: vincent.chng@ap.sony.com

Password: Chngchv999

Thanks & Regards,
Vincent

Thanks & Regards,
Vincent

From: Chng, Vincent

Sent: 03 March, 2008 4:16 PM

To: 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); 'Kris.Williams@am.sonyec-optiarc.com'; 'Shu-ming.Tzeng@qsitw.com'; 'haw.chen@qsitw.com'

Subject: RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Team,

Please take note of the arrangement for tomorrow's IN.

<Schedule>

Date: 3/4 Thursday

08:45 – 09:00 IN Pre-meeting (Slim DVDRW)
09:00 – May/Jun/Jul 08 Slim DVDRW IN Start
Lunch
13:15 – 13:30 IN Pre-meeting (Slim Comb)
13:30 - May/Jun/Jul 08 Slim Combo IN Start

<Dial-In Information>

Please use this number to dial in for the pre-meeting and IN.

Tel: + 65 6668 7508

Passcode: 703815

<Competitor information Summary>

From Apr 08 Reverse Auction, we are able to know the following competitor's pricing:

<Slim Combo>

- Optiarc/QSI \$21.30 (30% TAM)

Unfortunately, there was not much information that I could gather from other suppliers regarding Combo TAM. (Main discussion was on Slim DVDRW)

However, it seems that price competition in Combo is rather weak and price erosion from other suppliers will not be high.

<Slim DVDRW>

- TSST \$25.20 (60% TAM – However Dell maybe cutting their TAM due to some penalty put on TSST)
- PLDS \$25.50 (30% TAM)
- HLDS Est. \$25.55~25.60 (10% TAM – Not much information on HLDS)
- Optiarc/QSI \$25.60 (Asking for min. 10% TAM – Still negotiating)

Please let me know if there are any questions.

Thanks & Regards,
Vincent

From: Chng, Vincent

Sent: 28 February, 2008 11:26 AM

To: 'Sato, Tomio'; Mikami, Junsuke; Amino, Masafumi (Optiarc); 'Kris.Williams@am.sonyec-optiarc.com'; Shu-ming.Tzeng@qsitw.com; haw.chen@qsitw.com

Subject: FW: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Team,

As per informed earlier, Alex has schedule for the May/Jun/Jul IN to be held on 4th Mar 2008. (Please see below mail from Alex for more details).

As per informed by Alex, this coming IN will be done differently and all suppliers will be bidding for TAM allocation for May/Jun/July in one session. (ie. 1 price for the whole Q2 TAM for DVDRW and DVD/Combo)

I will provide the price/competitor summary and also dial-in information within this week for the pre-meeting. (Most likely be schedule on 3/4 morning).

Copy to Shu-ming: Please advice if you will be revising the cost adders for this coming IN and if yes, we have to submit to Alex by 3/3 Monday.

Attached is the usual administrative procedure from Dell IN admin.

At the mean time, please let me know your availability for this IN.

Thanks & Regards,
Vincent

Thanks & Regards,
Vincent

From: Alex_Wu@dell.com [mailto:Alex_Wu@dell.com]

Sent: 27 February, 2008 6:47 PM

To: Alex_Wu@dell.com

Cc: Hon_Man_Cheung@dell.com; Tong_Leong_Chan@dell.com; Ricky_Sim@dell.com; Jessica_Yu@dell.com; Alex_Oon@dell.com; Swee_Yuen_Chan@dell.com

Subject: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details

Hi all RMSD Supplier Account Managers (in Bcc list),

Kindly be advised of the below details regarding the upcoming Internet Negotiations (IN) for the Q2 FY09 Slim PATA Tray DVDRW and Combo. Please take a note that this time the IN is for the entire Q2 TAM on the targetted drives, and accordingly the price is expected to be set at quarterly basis (1 quarterly price throughout Q2 for the drive).

Please be sure to review/examine all the notes in the below details, and also double check if your account and password to the Ariba IN tools is valid. Our IN will be co-ordinated by Chan Swee Yuen.

1. 12.7mm PATA Tray DVDRW IN for Q2 FY09

Date: Mar 4th '08 (Tuesday). **Time:** 9.00am (Singapore time)

- Configurations: Bare Drive. Same or lower than the April assembly cost adders must be applied for Q2 as a commitment to get to this bid. Should any cost adders be updated please send me prior to COB 3/3 Monday, thanks.
- No of Suppliers: 4
- TAM Split: 40% (1st bidder), 25% (2nd bidder), 15% (3rd bidder), 10% (4th bidder) and 10% reserved for open allocation.

- Caution: Your drives must be qualified to ship in the bidded month to be able to get TAM awarded.
- Award is contingent on supplier having 10 DSI in the hubs at the beginning of the month, ample supply in the hubs at all times, and meeting quality requirements.

- o Forecasted Quarterly Volume: 3.8M+

- Forecast volumes are subject to change and fluctuation based on future market conditions and trend shifts during Q2 FY09

- o Minimum Bid Decrements: \$0.05

2. 12.7mm PATA Tray COMBO IN for Q2 FY09

Date: Mar 4th '08 (Tuesday). Time: 1.30pm (Singapore time)

- o Configurations: Bare Drive. Same or lower than the April assembly cost adders must be applied for Q2 as a commitment to get to this bid. Should any cost adders be updated please send me prior to COB 3/3 Monday, thanks.

- o No of Suppliers: 4

- o **TAM Split: 40% (1st bidder), 25% (2nd bidder), 15% (3rd bidder), 10% (4th bidder) and 10% reserved for open allocation.**

- Caution: Your drives must be qualified to ship in the bidded month to be able to get TAM awarded.
- Award is contingent on supplier having 10 DSI in the hubs at the beginning of the month, ample supply in the hubs at all times, and meeting quality requirements.

- o Forecasted Quarterly Volume: 1.5M+

- Forecast volumes are subject to change and fluctuation based on future market conditions and trend shifts during Q2 FY09

- o Minimum Bid Decrements: \$0.05

IN Overview

- o View to rank only.

- o No ties – the first supplier to reach the price point wins the award.

- o This will be an open-ended events; 15 minutes of initial bidding time and with 3-minute extensions (this may be reduced to 2-minute extensions later in the event).
- o You need to make best effort to be aggressive during this event. The system clock may not show on second for the last 5 seconds and so to ensure your bid is accepted by the tool, the Dell team highly recommend that don't try to beat the clock but to enter your bid at least 1 minute before the IN tool shuts down.
- o As always, by participating in this IN, suppliers are confirming their ability to support the volume/TAM award they win. TAM awards come with the expectation that suppliers will meet all current COS and quality requirements

Note: If this IN event does not align with Dell's expectations, Dell reserves the right to:

- Shut down the event early and accept or void any and all bids from each participant.
- Change the strategy of the IN event to have a 10 minutes blind bid at the end of events.

Let me know if you have any questions. Pls confirm acceptance of this IN by email and provide your contact number for the events.

Best Regards

Alex WU | RMSD GCM | DELL WWP Singapore | Office: +65 6823 6154 | Mobile: +65 9145 0160 | Fax: +65 6829 1154 | E-mail: alex_wu@dell.com

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Q254640**Metadata**

Date Received	03/13/2008 00:00:00	ORIGINAL
Date Sent	03/13/2008 00:00:00	ORIGINAL
Document Extension	msg	ORIGINAL
Email CC Text	Anita.Yin <Anita.Yin@qsitw.com>; Sato, Tomio <Tomio.Sato@jp.sonyec-optiarc.com>; Mikami, Junsuke <Junsuke.Mikami@jp.sonyec-optiarc.com>; sarah.tseng <sarah.tseng@qsitw.com>	ORIGINAL
Email From Text	Shu-ming.Tzeng	ORIGINAL
Email Subject	RE: Slim RMSD Internet Negotiation Q2 FY09 - 12.7mm PATA Tray DVDRW & Combo - Supplier Notice of IN Details	ORIGINAL
Email TO Text	'Chng, Vincent' <Vincent.Chng@ap.sony.com>; Amino, Masafumi (Optiarc) <masafumi.amino@jp.sonyec-optiarc.com>; haw.chen <haw.chen@qsitw.com>	ORIGINAL
Extracted Text	.\\Q012\\TEXT\\TEXT017\\Q000254640.txt	ORIGINAL
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File Size	186880.00	ORIGINAL
MD5 Hash	0D7D606C02F0DE9896ABDE9F87876730	ORIGINAL
OriginalDocID	Q000254640	ORIGINAL

EXHIBIT 20

From: Sally.huang Huang Yia-Ping <MAILER-DAEMON>
Subject: RE: [TOP]Infor. from PLDS Sales in Houston
To: caroline.lin Lin Chu-Tsu
Cc: haw.chen Chen Shang-Hao
Date: Tue, 16 Dec 2008 01:20:33 +0000
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
INC./OU=QMATEMAIL/CN=RECIPIENTS/CN=SALLY.HUANG

Dear Caroline:

Good report. Be careful that PLDS is very curious about our relationship with Optiarc, so just pretend that Optiarc and us are good partners. PLDS Taiwan sales just msn me to check this yesterday and also check TOP business status.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205

From: carolin.lin Lin Chu-Tsu [mailto:caroline.lin@qsitw.com]
Sent: Tuesday, December 16, 2008 7:48 AM
To: haw.chen Chen Shang-Hao; Sally.huang Huang Yia-Ping
Subject: [TOP]Infor. from PLDS Sales in Houston
Importance: High

Dear Haw,

For your information...

These are the information I got from PLDS sales, JC, this afternoon:

- Because of the following reasons, the working relationship between Edward and PLDS gradually began to deteriorate~
 - Edward & Andrew and PLDS have a different understanding of the price for PATA EOL and blocked volume commitment due to inconsistent communications during the chaotic transitional period.... (although it was only for 70K, but it affected their subsequent cooperation and trust)
 - Additionally, PLDS's qualification delay for 3C08 OPP hindered HP's fluency of ODD supply,
 - Finally, the aggressive contact from PLDS's sales towards HP's poor pull rate for 3C08 OPP,
- Currently, PLDS's inventory for HP, from the previous discontinuation for 3C08 to the current accumulation, will be enough to last until 1C09 (exceeds forecast demand by two months)



- During the recent process of re-qualifying opp model for Mainstream, PLDS failed in the acoustic testing. Additionally, PLDS was unable to respond as Edward combines OPP & Mainstream models, moving what was originally 2C09 up to 1.5C09. Based on the current over-supply by vendors and PLDS's qualification delay, it is very possible that PLDS will not be one of the suppliers for 1.5C09; Edward said to PLDS: "I don't need so many suppliers now (TSST, HLDS, Pioneer and US)."

I may have a chat w/C once or twice a month. If there is any further information requested, pls let me know...

Thanks & Best Regards,

.....
Caroline Lin Lin Chu-Tsu

Quanta Storage Inc. | OSBU Sales
Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile: 886-(0)963-092971

E-mail: Caroline.Lin@qsiw.com
.....

CERTIFICATE OF TRANSLATION ACCURACY

State of California
October 22, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00047029, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 21

Subject: FW: Thur is okay for us!
Date: Thu, 16 Oct 2008 14:31:11 +0800
Thread-Topic: Thur is okay for us!
From: Shu-ming.Tzeng Tzeng Shu-ming <Shu-ming.Tzeng@qsitw.com>
To: haw.chen Chen Shang-Hao <haw.chen@qsitw.com>, Sally.huang Huang Yia-Ping <Sally.huang@qsitw.com>
X-libpst-forensic-sender:/O=QMATE TECHNOLOGY
NC/OU=QMATEMAIL/CN=RECIPIENTS/CN=SHU-MING.TZENG

This time, it's PLDS asking us out to eat!

Currently, we have reserved 10/23 at noon, how many want to go?

From: Fannie Lee [mailto:Fannie.Lee@pldsnet.com]
Sent: Thursday, October 16, 2008 1:36 PM
To: Shu-ming.Tzeng Tzeng Shu-ming
Subject: Re: Thur is okay for us!

Got it. I will advise you the restaurant address once I book it and let's meet at noon on 10/23.

BTW, how many people do your team join the gathering?

Note: My E-Mail add is changed to Fannie.Lee@pldsnet.com

Best regards,
Fannie Lee
ODD-OEM Division
Philips & Life-On Digital Solutions Corporation
Tel: 886-2-8798-2798 Ext.8540
Fax: 886-2-5581-0868
E-mail: Fannie.Lee@pldsnet.com

<Shu-ming.Tzeng@qsitw.com>

2008/10/16 11:32 AM

To: <Fannie.Lee@pldsnet.com>

cc:

Subject: Thur is okay for us



Quanta Storage Inc.

Shu-ming Tzeng

Sales & Marketing Div.

Tel: 886-3-3288090 ext. 1108

Fax: 886-3-3277500

E-mail: shu-ming.tzeng@qsiw.com

Address: #F NO.188,

Wen-Hua 2nd Rd.

Kuei-Shen Hsiang,

Tao-Yuan Shien, Taiwan

CERTIFICATE OF TRANSLATION ACCURACY

State of California

October 29, 2013

Country of USA

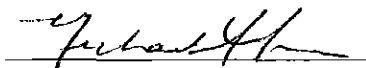
I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus).

I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00035636, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.



Michael A. Fowler

EXHIBIT 22

From: Michael Suk(michael.suk@samsung.com)
To: 'Yoo Nam-hyun'
CC: Kim Dae-sung; Choi Sang-phil; 'Son Jang-won'; Annie Na; Melody Park; Kati Park; Kacey Kim; Matthew Lee
BCC:
Subject: FW: Slim Combo Auction Schedule (8/31)
Sent: 09/02/2004 02:13:41 AM 0000 (GMT)
Attachments:

Assistant Manager Yoo Nam-hyun,

Please see Manager Lee Woo-cheol's e-mail below. The situation is that we might give up the supply of 30% which was ruled out from original auction, as the final price at the Internet Auction that took place yesterday (9/1) considerably lowered the final price; due to intense the competition for 1st place, compared to Lite-On's price forecast.

On this, we have received inquiry from locale of if we have the capacity of additional supply please check. It is judged to be an estimated amount of 350K-400K/month.

As it remains not finalized, please just review the supply prospects.

Thank you. Have a pleasant day.

Suk Yoon-seok

From: Matthew [mailto:mat.lee@samsung.com]
Sent: Thursday, September 02, 2004 8:54 AM
To: 'Matthew Lee'; sangphil.choi@samsun.com; 'Son Jang-won'; 'Suk Yoon-seok'; 'davidtx.kim'
Subject: RE: Slim Combo Auction Schedule (8/31)

Manager Suk,

As mentioned below, seeing the price fall this time; lite-on is reviewing to give up 30%, after saying that they will settle as price of 1st~2nd place.

Please review whether we have the capacity to receive supply of an additional 10-20%, anticipated to be around 350-400k/month. While an official request is yet to be received, we should review supply prospects in advance.

Thank you.

Matthew (Woocheol) Lee
 Account Manager
 Optical Media Solution Div.
 Austin Branch
 Samsung Semiconductor Inc.
 Tel : 512-338-5540
 Cell : 512-699-0193
 Fax : 512-338-5533
 Email : mat.lee@samsung.com

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-----Original Message-----

From: Matthew Lee [mailto:mat.lee@samsung.com]
Sent: Wednesday, September 01, 2004 1:51 AM
To: 'Matthew'; sangphil.choi@samsun.com; 'Son Jang-won'; 'Suk Yoon-seok'; 'davidtx.kim'
CC: 'Byeon Sang-kwon'; 'Go Dae-yoon'; 'Kim Chun-joong'; 'Lee Kyung-ho'; 'Cho Seo-hyun'; 'Hwang In-sup'
Subject: RE: Slim Combo Auction Schedule (8/31)

Confidential-Restricted



TSSTK-0080411PCT

To : Group Leader Kim Dae-sung / Manager Suk Yoon-seok
 CC : CEO / Sales&Marketing Team Leader / Development Team Leader / G. Management Team Leader
 From : Lee Woo-cheol

Results of the October Slim Combo auction conducted today.

1. Final Price

	September	October	Remarks		
TSST	46.29	42.48	1 st place 40%	270K	
HLDS	46.50	43.05	4 th place 10%		65K
Lite-on	46.35	42.49	2 nd place 30%	200K	
QSI	46.60	42.50	3 rd place 20%		130K

2. Supply: 270k units anticipated in October

3. Progress

- Intense Auction—total 4 hours and 30 minutes only for October. November-December is to be conducted according to a separate schedule.
- From \$46.29 to low \$43, all three companies persisted intense competition to secure 1st place; HLDS withdrew at low \$43
- Upon subsequently vying against QSI, wrapped up with our scoring the No. 1 position
- Suggested a deal with QSI but failed on 1st attempt. Deal closed on 2nd attempt with QSI agreeing on the condition of us taking the 1st place in October, QSI 1st place in November, and us again 1st place in December

4. Results

- Competition

- HLDS: Taking the 3rd-4th place in both August/September at the last auction, aggressively intervened in bidding but exposed old model limits. Planned to release new model in early 2005.
- QSI: Responded aggressively to secure October's No. 1 position but gave up by dint of the Deal with us. They claim it's a bid to clear out inventory and release November's new model—verification needed
- Sony/Lite-on: Secured 30% without participating in Auction, according to terms of price between the 1st-2nd place from package deal when slim DVD-W was launched.

-Background

- In last June's auction our pricing standard was cut by \$7 and as \$4 was cut in this August's auction, price of previously high-priced combo slim fell (marginal reduction in this auction had been actually anticipated due to last auction's price dip)
- this is Dell's strategy of having 4 vendors for combo slim model that will continue to develop in volume and sales catering to vendor demand on combo slim that guarantees volume and sales at year's end.

-Requests

- Supply: October 1st place, November 2nd place, December 1st place. As tight supply might accompany the 1st place in all months, verification that we have no supply issues needed
- Early adoption of new model: Necessity of early adoption schedule on leadfree and 462C which is VE models, slated to be launched in March 2005. In the BPI meeting yesterday, Dell requested to push it up to February, but active review of December-January launch prospects also needed

-November/December auction plan: Expected to be a two-party battle between us and QSI in November/December due to October's price dip. As long as we stay the course on the deal with QSI, anticipated to be easily finalized.

Thank you.

best regards,

Matthew Lee
 Account Manager
 Optical Media Solution Div.
 Austin Branch
 Samsung Semiconductor Inc.
 Tel : 512-338-5540
 Cell : 512-699-0193
 Fax : 512-338-5533
 Email : mat.lee@samsung.com

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-----Original Message-----

From: Matthew [mailto:mat.lee@samsung.com]
Sent: Monday, August 30, 2004 3:54 PM
To: mat.lee@samsung.com; sangphil.choi@samsung.com; 'Son Jang-won'; 'Suk Yoon-seok'; 'davidtx.kim'
CC: 'Byeon Sang-kwon'; 'Go Dae-yoon'; 'Kim Chun-joong'; 'Lee Kyung-ho'; 'Cho Seo-hyun'; 'Hwang In-sup'
Subject: RE: Slim Combo Auction Schedule (8/31)

Group Leader Kim, Manager Suk,

TAM has been revised yet again from the previous 40%/15%/15% to 40%/20%/10%.
Please verify that we're clear of supply issues.

Thank you.

Matthew (Woocheol) Lee
Account Manager
Optical Media Solution Div.
Austin Branch
Samsung Semiconductor Inc.
Tel : 512-338-5540
Cell : 512-699-0193
Fax : 512-338-5533
Email : mat.lee@samsung.com

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-----Original Message-----

From: Matthew Lee [mailto:mat.lee@samsung.com]
Sent: Sunday, August 29, 2004 3:04 PM
To: sangphil.choi@samsung.com; 'Son Jang-won'; 'Suk Yoon-seok'; 'davidtx.kim'
CC: Matthew Lee; 'Byeon Sang-kwon'; 'Go Dae-yoon'; 'Kim Chun-joong'; 'Lee Kyung-ho'; 'Cho Seo-hyun'; 'Hwang In-sup'
Subject: RE: Slim Combo Auction Schedule (8/31)

Team Leader Kim,

Sony/Liteon is correct. I was mistaken.

The auction time has been changed from August 31 (Tuesday) 7am to 6pm (Wednesday, September 1; 8am Korea time).

Thank you.

Matthew (Woocheol) Lee
Account Manager
Optical Media Solution Div.
Austin Branch
Samsung Semiconductor Inc.
Tel : 512-338-5540
Cell : 512-699-0193
Fax : 512-338-5533
Email : mat.lee@samsung.com

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-----Original Message-----

From: davidtx.kim [mailto:davidtx.kim@samsung.com]

Sent: Sunday, August 29, 2004 10:51 PM
To: 'Matthew'; 'Suk Yoon-seok'; 'Son Jang-won'; sangphil.choi@samsung.com
CC: 'Hwang In-sup'; 'Cho Seo-hyun'; 'Lee Kyung-ho'; 'Kim Chun-joong'; 'Go Dae-yoon'; 'Byeon Sang-kwon'
Subject: RE: Slim Combo Auction Schedule (8/31)

Manager Lee,
As far as I know, SONY/LITEON TAM has been already finalized... (DEAL for Slim DVD+RW order)
Please confirm.
Thanks
David

From: Matthew [mailto:mat.lee@samsung.com]
Sent: Thursday, August 26, 2004 11:32 AM
To: Kim Dae-sung; Suk Yoon-seok; Son Jang-won; sangphil.choi@samsung.com
CC: Lee Woo-cheol; 'Hwang In-sup'; Cho Seo-hyun; 'Lee Kyung-ho'; Kim Chun-joong; Go Dae-yoon; 'Byeon Sang-kwon'
Subject: RE: Slim Combo Auction Schedule (8/31)

To: Group Leader Kim Dae-sung / Manager Suk Yoon-seok
CC: CEO / Sales & Marketing Team Leader / Development Team Leader / G. Management Team Leader
From: Lee Woo-cheol

Slim combo October-December auction schedule:

1. Date & Time: 8/31 (Tues) 7AM (Korean Time 8/31 9PM)
2. Bidding Price: \$0.1
3. TAM
 1. Total amount: around 1,670k units
 2. Split: 40% (670K) / 30% (500K) / 15% (250K) / 15% (250K)
 3. As 30%, 500k, has already been earmarked to other supplier, auction will be conducted only on the remaining 670K 250K / 250K
(tam to be finalized in advance if Philips/QSI enters slim combo)
4. Supply Prospects Review
 1. As 200K-250K/month anticipated with the 1st place at 40%, 670K, review supply capacity prospects
5. Bottom Price Review
 1. As the bid for the No. 1 position anticipated to intensify, please review a \$44 bottom
 2. Will provide an update on competitor price and target price.
 3. With supply problems, pursue the 1st place for only 1-2 months (the 2nd/3rd place competition is meaningless anyway)

Thank you.

Matthew (Woocheol) Lee
Account Manager
Optical Media Solution Div.
Austin Branch
Samsung Semiconductor Inc.
Tel : 512-338-5540
Cell : 512-699-0193
Fax : 512-338-5533
Email : mat.lee@samsung.com

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-----Original Message-----

From: Bill_Bundlie@Dell.com [mailto:Bill_Bundlie@Dell.com]
Sent: Tuesday, August 24, 2004 11:34 PM
Cc: Eric_Bremer@Dell.com; Michael_L_Robertson@Dell.com; Manish_Deoghare@Dell.com; Diana_Wu@Dell.com; Terry_Maresh@Dell.com
Subject: Slimline COMBO IN Details

All,

Due to the unavailability of some key people, I have had to slip the next slimline COMBO Internet Negotiation to next Tuesday, August 31st at 7:00am (Austin time). Details are as follows:

Configurations: Slimline COMBO Bare Drive

Monthly bidding for October, November, December (Separate events for each month):

Show Rank and Best Bid

Bid Decrement: \$ 0.10

Opening bid will be the lowest price from the previous month (i.e. if you bid down your October price to \$40, your opening bid for November will be \$40)

TAM Award: Only 70% of the COMBO TAM will be available. First Place = 40%, Second Place = 15% and Third Place = 15%. No ties – first supplier to reach the price wins the award.

Current forecast (70%) for the three months is 1,165K

Please confirm with Diana Wu or myself your ability to support the TAM awards for each month. TAM awards come with the expectation that suppliers will meet all current COS and quality requirements. Please confirm you have received this notice and let me know if you have any questions.

Thanks,

Bill Bundlie

Global Commodity Manager

Removable Media Storage

Worldwide Procurement

(512) 728-4519

Bill_Bundlie@dell.com

State of California
September 27, 2013
Country of USA

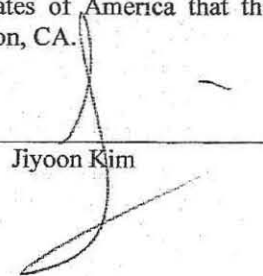
I, the undersigned, Jiyeon Kim, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

Nine years of litigation discovery translation/editing experience.

I am familiar and competent with both the Korean and English languages. I have received and translated from Korean into English [TSSTK-0080411 – TSSTK-0080415], and hereby attest that the English translation is a faithful and accurate rendition of the Korean original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on September 27 2013 in Fullerton, CA.



Jiyeon Kim

EXHIBIT 23

From: haw.chen 陳尚昊 <MAILER-DAEMON>
Subject: RE: Regarding Price for 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) OPP
To: Sally.huang 黃雅平; caroline.lin 林初慈
Date: Fri, 24 Oct 2008 10:19:51 +0000

Amino-san called me. He checked my opinion. I told him better to secure some share like 20% from OPP.

So in today's con-call with Edward,

1. He will show intention to get 20~30% share.
2. He is not going to quote any price today.
3. He will check Edward's opinion and discuss with us next Monday.

Haw

From: Sally.huang 黃雅平
Sent: Friday, October 24, 2008 4:57 PM
To: haw.chen 陳尚昊; caroline.lin 林初慈
Subject: RE: Regarding Price for 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) OPP

Dear all:

I pushed Amino-san to quote 24.3 or 24.35 for OPP and he will discuss with Edward tonight then discuss with us later.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205

From: Sally.huang 黃雅平
Sent: Friday, October 24, 2008 10:15 AM
To: haw.chen 陳尚昊; caroline.lin 林初慈



Subject: RE: Regarding Price for 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) OPP

Dear Haw:

Don't worry about it. Edward already said OPP will lead by Optiarc. Attachment is revised P/L and I thought 25.4 for 088H/088I should be ok. Please let me know your idea and I will discuss with Amino-san. We cannot lose our share due to AD-7590/91S.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205

From: haw.chen 陳尚昊

Sent: Friday, October 24, 2008 9:49 AM

To: Sally.huang 黃雅平; caroline.lin 林初慈

Subject: RE: Regarding Price for 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) OPP

But based on previous agreed strategy with Amino, they are responsible for OPP portion. I think we'd better not provide quotation before getting his approval.

Thanks,

- ü Therefore, I'd suggest submitting a quote of \$24.40 tomorrow and be prepared for the further decrease to USD24.25~30 in the end if we want to win over around 20% share.

From: Caroline.Lin 林初慈 [mailto:caroline.lin@qsitw.com]

Sent: Friday, October 24, 2008 7:59 AM

To: haw.chen 陳尚昊; Sally.huang 黃雅平

Subject: Regarding Price for 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) OPP

Importance: High

Dear Haw & Sally,

I just got some information, which may be useful for our OPP RFQ discussion w/Optiarc:

n 4 Key competitors: PLDS, TSST, HLDS and us.

- ü Since PLDS has no share in mainstream, they'll definitely try their best to get the max. share to survive and their price shall be the lowest.
- ü HLDS will also participate in the competition to make sure they still have certain demand from OPP, especially when the ratio of OPP stays high recently.

n The price projection among suppliers is around USD24.25~24.50

- ü Edward's price in mind is USD24.00
- ü In order to protect the price in certain level, suppliers have the consensus to keep the price no lower than USD24.25.
- ü According to our conclusion, Edward probably will only focus on pushing PLDS's price coz of its critical need of NO.1 share and also to maintain more key suppliers in the pool for next 1.5C09 quotation.
- ü Therefore, I'd suggest submitting a quote of \$24.40 tomorrow and be prepared for the further decrease to USD24.25~30 in the end if we want to win over around 20% share.

n Furthermore, I may need your clear discussion w/Optarc regarding the future share division among AD-7580 & 7590. If HP is going to provide the separate forecast, how will we both do with the OPP demand allocation? Pls kindly advise?

It's for your reference that the allocation of **Mainstream** is as the followings :

- ü No.1: TSST USD24.42 **35%**
- ü No.2: HLDS USD24.45 **31%**
- ü No.3: QSI/Optiarc USD24.50 **30%**
- ü No.4: Pioneer around USD24.50 **4%**

Thanks & Best Regards,

.....

Caroline Lin 林初慈

Quanta Storage Inc. | OSBU Sales

Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile: 886-(0)963-092971

E-mail: Caroline.Lin@qsitw.com

.....

QUANTA_HAW109336**Metadata**

Atttitle	697	ORIGINAL
Company	Quanta	ORIGINAL
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Docdate	10/24/2008 03:19:51 -0700	ORIGINAL
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GuessedCharset	UTF-8	ORIGINAL
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Lang	English	ORIGINAL
Pgcount	4	ORIGINAL
Source	Quanta	ORIGINAL
Subject	RE: Regarding Price for 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) OPP	ORIGINAL
To	Sally.huang ; caroline.lin	ORIGINAL

EXHIBIT 24

1 John M. Taladay
Evan J. Werbel
2 BAKER BOTTS L.L.P.
1299 Pennsylvania Avenue, NW
3 Washington, DC 20004
Tel: (202) 639-7700
4 Fax: (202) 639-7890

5 *Counsel for Defendants Philips & Lite-On Digital*
Solutions Corporation and Philips & Lite-On Digital
6 *Solutions U.S.A., Inc.*

7

8

UNITED STATES DISTRICT COURT

9

NORTHERN DISTRICT OF CALIFORNIA

10

11 **IN RE OPTICAL DISK DRIVE**
12 **PRODUCTS ANTITRUST**
LITIGATION

MDL No. 3:10-MD-02143 RS

13

14

This Document Relates to:

15

INDIRECT PURCHASER ACTIONS

16

17

DEFENDANTS PHILIPS & LITE-ON DIGITAL SOLUTIONS CORPORATION AND
PHILIPS & LITE-ON DIGITAL SOLUTIONS U.S.A., INC.'S SECOND
18 **SUPPLEMENTAL RESPONSE TO INDIRECT PURCHASER PLAINTIFFS'**
19 **FIRST SET OF INTERROGATORIES, NOS. 4, 5 AND 13**

20

21

22

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DEFENDANTS PLDS AND PLDS USA'S SECOND
SUPPLEMENTAL RESPONSE TO INDIRECT PURCHASER
PLAINTIFFS' FIRST SET OF INTERROGATORIES

Case No. MDL No. 3:10-MD-02143 RS



1 Pursuant to Rule 33 of the Federal Rules of Civil Procedure, Defendants Philips & Lite-
2 On Digital Solutions Corporation ("PLDS") and Philips & Lite-On Digital Solutions U.S.A., Inc.
3 ("PLDS USA") (collectively, "Defendants"), hereby submit this second supplemental response
4 to Indirect Purchaser Plaintiffs' First Set of Interrogatories, dated September 2, 2010.

5 **GENERAL OBJECTIONS**

6 1. Defendants' responses are made subject to these General Objections, without
7 waiver of any objections to these requests, and without waiver of objections to the admissibility,
8 relevancy, or materiality of any of the information or documents relating to any issue in this case.
9 Defendants' responses are based on information presently known to Defendants, and are made
10 without prejudice to their right to assert additional General and Specific Objections should they
11 discover additional grounds for objections, or to supplement or change these responses if other
12 information becomes available.

13 2. No express, incidental or implied admissions are intended by these Responses and
14 should not be read or construed as such.

15 3. Defendants do not intend, and its Responses should not be construed as, an
16 agreement or acquiescence with any characterization of fact, assumption or conclusion of law
17 contained in or implied by the Interrogatories.

18 4. Defendants object to Plaintiffs' Interrogatories to the extent that they are vague,
19 ambiguous or susceptible to more than one interpretation. Defendants shall attempt to construe
20 such vague or ambiguous Requests so as to provide for the production of relevant information or
21 information designed to lead to the discovery of admissible evidence.

22 5. Defendants object to Plaintiffs' Interrogatories to the extent that they contain
23 terms that are insufficiently or imprecisely defined. Defendants shall attempt to construe such
24 insufficient or imprecise terms so as to provide for the production of relevant information or
25 information designed to lead to the discovery of admissible evidence.

26 6. Defendants object to Plaintiffs' Interrogatories to the extent they seek information
27 that is not reasonably calculated to lead to the discovery of admissible evidence.

28 7. Defendants object to these Interrogatories to the extent they seek information

1 concerning conduct outside the United States that is not sufficiently alleged to have caused
2 direct, substantial and reasonably foreseeable effects within the United States.

3 8. Defendants object to these Interrogatories to the extent they seek information
4 protected by the attorney-client privilege, the attorney work product doctrine, and/or any other
5 applicable statutory or common law privilege, protection, or confidentiality designation in the
6 United States or elsewhere. Nothing contained in these Responses is intended or should be
7 construed as a waiver of the attorney-client privilege, the attorney work product doctrine, and/or
8 any other applicable privilege or protection.

9 9. Defendants object to these Interrogatories to the extent they seek discovery of
10 information or documents already within the possession, custody or control of Plaintiffs and/or
11 Plaintiffs' counsel, or that are available from public sources.

12 10. Defendants object to these Interrogatories to the extent they are overbroad or
13 unduly burdensome.

14 11. Defendants objects to these Interrogatories to the extent they seek information for
15 which the burden or expense of the proposed discovery outweighs any probative value.

16 12. Defendants object to Plaintiffs' Interrogatories to the extent that they seek
17 information related to claims that predate October 27, 2005. All claims prior to October 27,
18 2005 are barred by the statute of limitations.

19 13. Defendants object to Plaintiffs' Interrogatories to the extent they seek information
20 related to conduct after March 1, 2009. Defendants' responses are limited to conduct that
21 occurred prior to March 1, 2009.

22 14. Defendants object to these Interrogatories to the extent they purport to seek
23 information regarding or relating to "ODD PRODUCTS," as distinct from ODDs,¹ on the
24 grounds that such information is not reasonably calculated to lead to the discovery of admissible
25 evidence relevant to any adequately pled allegation against Defendants in the Second Amended
26 Complaint and would be unduly burdensome.

27
28 ¹ For the purposes of these responses, Defendants are using the definition of ODDs as described in the Indirect
Purchasers' Second Amended Class Action Complaint.

15. Defendants object to Plaintiffs' Definition of "You," "Your," and "Defendants" on the grounds that it renders the Interrogatories overbroad and unduly burdensome. Unless otherwise noted, Defendants will construe the terms "You," "Your," and "Defendants" to refer to Defendants Philips & Lite-On Digital Solutions Corporation ("PLDS") or Philips & Lite-On Digital Solutions U.S.A., Inc. ("PLDS USA") and their present officers, directors, employees, agents, representatives, attorneys and consultants.

16. Defendants object to Plaintiffs' Definitions and Instructions and to each Interrogatory to the extent they purport to impose any discovery obligation greater than or different from those under the Federal Rules of Civil Procedure, the Local Rules of the Northern District of California, or beyond any discovery limitations imposed by the Court. Defendants will provide responses to these Interrogatories that comply with their obligations under the Federal Rules of Civil Procedure and Rules and Orders of this Court.

17. Defendants object to each of the Interrogatories to the extent they request that Defendants identify and describe *all* facts, *all* legal theories, *all* communications, or *all* documents related to the subject matter of the Interrogatory on the grounds that they are overbroad, unduly burdensome, and seek information that is not relevant to the claims or defenses of any party in this litigation and not likely to lead to the discovery of admissible evidence.

SPECIFIC OBJECTIONS AND RESPONSES TO INTERROGATORIES

INTERROGATORY NO. 4

Identify each actual, proposed or discussed AGREEMENT between YOU and any producer of ODDs and ODD PRODUCTS RELATING TO prices, production output and/or inventory levels, and order of auction finishing place, during the RELEVANT TIME PERIOD. For every such instance, state:

- (a) The identity of the participants and all PERSONS with knowledge thereof;
- (b) When such agreement was entered into;
- (c) Where such agreement was entered into;
- (d) The terms of such agreement; and

1 (e) The identities of all of YOUR EMPLOYEES with knowledge of such agreements.

2 **RESPONSE:**

3 Defendants reassert and incorporate each of the General Objections set forth above.
 4 Defendants further object to this Interrogatory to the extent it seeks information protected by the
 5 attorney-client privilege, work product doctrine, or common interest privilege, or by any other
 6 applicable doctrine or privilege. Defendants object to this Interrogatory on the grounds that it is
 7 overbroad, unduly burdensome, and not reasonably calculated to lead to the discovery of
 8 admissible evidence. For example, to the extent this Interrogatory seeks the discovery of
 9 information and/or documents regarding Defendants' sales outside of the United States and
 10 unrelated to United States commerce, such sales are beyond the scope of this litigation and
 11 thereby render this Interrogatory overbroad and not reasonably calculated to lead to the
 12 discovery of admissible evidence. Defendants specifically object that the terms "actual,"
 13 "proposed," and "agreements" are vague and ambiguous and call for legal conclusions. Subject
 14 to and without waiving their General or Specific Objections, Defendants respond as follows.

15 In their response to this Interrogatory on July 19, 2012, Defendants provided Plaintiffs
 16 with a list of known documents that purport to show actual or proposed agreements with ODD
 17 competitors. At the request of Plaintiffs, Defendants hereby supplement their Interrogatory
 18 response to provide general information regarding other actual or proposed agreements of which
 19 Defendants have knowledge, and that are not referenced in documents previously produced by
 20 Defendants. Defendants know of a small number of additional agreements for which they are
 21 not aware of any supporting documentation. Pursuant to an agreement with Plaintiffs, for
 22 purposes of this response, Defendants are not interpreting "agreements" in this context to include
 23 joint venture, alliance, co-development or customer/supplier relationships.

24 PLDS believes that, in or around June 2007, Freddie Hsieh of PLDS and HC Son of
 25 HLDS reached an agreement regarding Microsoft's purchase of ODDs for use in its Xbox game
 26 console. Prior to submitting its response to a Microsoft RFQ, Mr. Hsieh phoned Mr. Son to
 27 discuss pricing. PLDS believes that Mr. Hsieh placed this call from Taiwan. Mr. Hsieh and Mr.
 28 Son agreed that neither company would lower its then-current price to Microsoft in response to

1 the RFQ. Shortly thereafter HLDS was disqualified as a supplier to Microsoft on quality
2 grounds.

3 PLDS also is aware of an agreement pertaining to an HP procurement event held in
4 August 2008 relating to HP's bPC and cPC businesses. The event was an online auction for the
5 procurement of half-height SATA DVD-RWs. JC Lim, PLDS' Account Manager for the HP
6 account, spoke on the phone to Eugene Yang, his counterpart at HLDS, regarding this auction.
7 Defendants believe that Mr. Lim was in Texas when this call took place. Mr. Lim and Mr. Yang
8 agreed that PLDS would aim for rank number three and HLDS would aim for rank number two
9 in the auction, and that HLDS would not to lower its price significantly. It is PLDS'
10 understanding, however, that HLDS dropped its price significantly in a failed attempt to compete
11 with TSST for first place. Mr. Lim's direct supervisor, Jerry Hsieh, was informed in advance of
12 the procurement event that Mr. Lim had entered into this agreement.

13 PLDS is aware of an agreement and a proposed agreement that both relate to Dell
14 procurement events held on December 1, 2008. There were two consecutive internet
15 negotiations on December 1st -- one held in the morning and one held in the afternoon. The
16 morning auction was for the supply of 12.7 mm SATA Tray DVD-RWs. The afternoon auction
17 was for the supply of 12.7 mm SATA Slot DVD-RWs.

18 Jerry Hsieh, PLDS' Global Account Director for the Dell account, attempted
19 unsuccessfully to reach an agreement with QSI for the Tray event held that morning. PLDS
20 believes that QSI was not a direct bidder in the event, but it was participating via its
21 manufacturing partnership with Sony Optiarc. Either Mr. Hsieh or his subordinate Fannie Lee
22 contacted QSI proposing an agreement whereby QSI would take fourth place and PLDS would
23 take third place in the auction. No agreement was reached.

24 Prior to the Slot auction that afternoon, Jerry Hsieh phoned Haw Chen (aka "Howtz"), his
25 counterpart at QSI. Mr. Hsieh placed this call from Taiwan. The two reached an agreement
26 whereby PLDS would bid a certain price and allow QSI to win the third place slot.

27 In addition to the above, PLDS is aware that other agreements existed with respect only
28 to individual procurement events, but for which the specific procurement event cannot be

1 determined. A number of these agreements were entered into by Michael Chang who served as
 2 PLDS' HP account manager from approximately March 2007 to December 2007. The precise
 3 number of agreements, the exact timing of these agreements and the specific products involved
 4 are unknown at this time. However, PLDS believe that these agreements would have involved
 5 no more than seven events for half-height optical disc drives during Mr. Chang's combined
 6 tenure at Lite-On IT and PLDS. Mr. Chang entered into these agreements with Daniel Hur
 7 and/or Eugene Yang. Daniel Hur served as HLDS' account manager for HP and was succeeded
 8 in this role by Eugene Yang. PLDS believes that Mr. Chang reached these agreements from
 9 Houston, Texas. Mr. Chang's supervisor or other members of PLDS' HP account team may
 10 have been aware of the agreements at the time they occurred.

11 A number of additional agreements relating to single procurement events were reached
 12 by Frederick Wong, the account manager serving PLDS' Dell account beginning in
 13 approximately September 2007. PLDS has been unable to relate these agreements to specific
 14 procurement events or products, but they all relate to the Dell account. PLDS believes Mr.
 15 Wong reached these agreements from Singapore. Mr. Wong's supervisor or other members of
 16 PLDS' Dell account team may have been aware of the agreements at the time they occurred.

17 Defendants are presently unaware of any relevant agreements without supporting
 18 documentation which relate to any customers other than those identified above. Defendants
 19 reserve the right to supplement this response should they uncover additional responsive
 20 information.

21 **INTERROGATORY NO. 5**

22 Identify any MEETING or COMMUNICATION BETWEEN YOU and other producers
 23 of ODDs and ODD PRODUCTS during the RELEVANT TIME PERIOD regarding the pricing
 24 of, price increase announcements concerning, terms or conditions of sales with respect to, profit
 25 margins or market share of, auctions for, and/or dynamic bidding events with respect to, ODDs
 26 and ODD PRODUCTS. For each such MEETING or COMMUNICATION:

27 (a) Provide the date and location of the MEETING or COMMUNICATION;

28

(b) Identify the PERSON(S) who initiated, called, organized, attended or participated in the MEETING or COMMUNICATION;

(c) Describe the subject matter discussed and any information YOU provided or received;

(d) Describe every action taken by YOU as a result of the MEETING or COMMUNICATION; and

(e) Identify all PERSONS with knowledge relating to the MEETING or COMMUNICATION.

RESPONSE:

Defendants reassert and incorporate each of the General Objections set forth above. Defendants further object to this Interrogatory on the grounds that it seeks information protected by the attorney-client privilege, work product doctrine, or common interest privilege, or by any other applicable doctrine or privilege. Defendants object to the terms “dynamic bidding events,” “meeting” and “communication,” because they are vague, ambiguous, overbroad, unduly burdensome, and not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving their General or Specific Objections, Defendants respond as follows.

In response to this Interrogatory, Philips, Lite-On IT, PLDS and PLDS USA previously provided Plaintiffs with a list of 250 documents that reflected communications and/or meetings with competitors. Defendants also are producing to Plaintiffs numerous additional documents contemporaneous to this submission, some of which are responsive to this request.² In addition, Defendants hereby supplement their previous response as follows. For purposes of this response, and pursuant to an agreement with Plaintiffs, Defendants are not including meetings or communications relating to joint venture, alliance, co-development or customer/supplier relationships.

Defendants generally are aware that certain individual employees had additional meetings or communications with competitors during the Specified Period, in addition to those reflected in

² See ODDCIV-000359254 - 357; 000359358 - 429; 000359487 - 9509; 000359524 - 547; 004105184 - 187; 004105191 - 193; 004105207 - 215; 004105216 - 227; 004105236 - 245; 004105252 - 258; 004105265 - 279; 004105300 - 323; 004105327 - 358; 004105359; 004105367; 004105369 - 400; and 005383828 - 5956.

1 the documents identified, that might be responsive to this request. Defendants however do not
 2 possess the specific and detailed information requested in this Interrogatory about individual
 3 meetings or communications. Defendants are aware that at least Michael Chang, YM Chang,
 4 Freddie Hsieh, Jerry Hsieh, Fannie Lee, JC Lim, CD Liu, Susie Peng, Peggy Su, Charlie Tseng
 5 and Frederick Wong had such additional meetings and communications to varying degrees.
 6 Defendants are not presently aware of further documentary evidence regarding potentially
 7 responsive meetings or communications. Defendants reserve the right to supplement this
 8 response should they uncover additional responsive information.

9 **INTERROGATORY NO. 13**

10 State whether any DOCUMENTS or information related to YOUR ODD and ODD
 11 PRODUCTS production, marketing, sales and distribution was destroyed, discarded, erased,
 12 deleted, purged, or otherwise lost. If YOUR answer is in any way in the affirmative:

- 13 (a) Describe in detail the content of each such DOCUMENT or information and the date it
 14 was destroyed, discarded, erased, deleted, purged or lost;
 15 (b) Identify each PERSON who had any role or responsibility in destroying, discarding,
 16 erasing, purging, deleting or losing of each such DOCUMENT or information; and
 17 (c) Describe in detail the circumstances under which each such DOCUMENT or information
 18 was destroyed, discarded, erased, deleted, purged, or lost.

19 **RESPONSE:**

20 Defendants reassert and incorporate each of their General Objections set forth above.
 21 Defendants specifically object on the grounds that this Interrogatory is vague, ambiguous,
 22 overbroad, oppressive and unduly burdensome. Subject to and without waiving their General or
 23 Specific Objections, Defendants respond as follows. In its initial response to this Interrogatory
 24 on July 19, 2012, PLDS stated that it was not aware of any documents being destroyed,
 25 discarded, erased, deleted, purged, or otherwise lost since the initiation of the present action.
 26 PLDS has recently learned that a PLDS USA, Inc. Sales Manager for Latin America, Virginia
 27 Aleman, departed the company on September 28, 2012. Upon her departure from PLDS USA,
 28 Virginia Aleman returned her laptop to PLDS USA's IT Department. PLDS USA's IT

1 Department inadvertently reformatted Ms. Aleman's former laptop with the plan of reissuing it
 2 to another PLDS USA employee. Despite efforts to preserve documents and data from PLDS
 3 USA employees who might be relevant to this litigation, the PLDS USA IT Department
 4 inadvertently reformatted Ms. Aleman's computer around the time of her departure. PLDS USA
 5 does not know whether Ms. Aleman's computer had documents or information related to PLDS'
 6 ODD production, marketing, sales or distribution in the United States, but PLDS USA does not
 7 believe that Ms. Aleman's documents would be relevant to this litigation given that her territory
 8 was Latin America. Ms. Aleman's emails for the relevant period are not available at this time
 9 because PLDS USA does not currently have in its possession server back-up tapes from the
 10 relevant time period. To the extent documents become available for Ms. Aleman and are
 11 responsive to Plaintiffs' requests, they will be produced in this litigation.

12
 13 By: /s/ John M. Taladay

14 John M. Taladay
 15 Evan J. Werbel
 16 BAKER BOTTS L.L.P.
 17 1299 Pennsylvania Avenue, NW
 18 Washington, DC 20004
 19 Tel: (202) 639-7700
 20 Fax: (202) 639-7890

21 *Counsel for Defendants Koninklijke Philips*
 22 *Electronics N.V., Lite-On IT Corporation,*
 23 *Philips & Lite-On Digital Solutions*
 24 *Corporation and Philips & Lite-On Digital*
 25 *Solutions U.S.A., Inc.*
 26
 27
 28

EXHIBIT 25

From: Caroline.Lin 林初慈 <caroline.lin@qsitw.com>
To: 'Sally.huang 黃雅平' <Sally.huang@qsitw.com>
Cc: 'haw.chen 陳尚昊' <haw.chen@qsitw.com>
In-Reply-To: <58AAACE6EEAE9024B9E42C1E8BB6E7005052353CD@svrmail.qsinc.com.tw>
Subject: RE: RFQ Discussio with Amino-san
Date: Thu, 16 Oct 2008 15:05:41 -0500
X-Priority: 1 (Highest)
Importance: High
X-OriginalArrivalTime: 16 Oct 2008 20:06:15.0669 (UTC) FILETIME=[A51B2A50:01C92FCA]

Hello, Sally

I called Edward this morning and here is the conclusion:

- n In stead of negotiate with us by models, he'll discuss mainstream portion w/me and OPP portion w/Optiarc Steve.

He is still firm to do the RFQ with us & Optiarc as one supplier and thinks to have 2 different people to discuss in terms of OPP & Mainstream shall be the better offer for us already.

Furthermore, I'll have dinner w/HLDS Eugene this Friday evening and get the consensus on the price protection.

I Will call you up to discuss again this evening.

Thanks & Best Regards,

.....
Caroline Lin 林初慈
Quanta Storage Inc. | OSBU Sales
Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile: 886-(0)963-092971

E-mail: Caroline.Lin@qsitw.com
.....

From: Sally.huang 黃雅平 [mailto:Sally.huang@qsitw.com]
Sent: Wednesday, October 15, 2008 10:06 PM
To: caroline.lin 林初慈
Cc: haw.chen 陳尚昊
Subject: RFQ Discussio with Amino-san

Dear Caroline:

Please highlight to Edward that we would like to separate the RFQ with Optiarc. I just discussed with Amino-san, his original thought is

AD-7560/7580 for mainstream



AD-7590 for OPP

I told him AD-7590 only can support limited platforms so HP requested that AD-7560 or AD-7580 has to support OPP.

Our conclusion is:

AD-7580/AD-7590 for OPP ---Target number 2 position

AD-7560 for mainstream ----Target number 2 position

Please update the result after your discussion with Edward

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell:+886-955707205

QUANTA_HAW198444**Metadata**

Atttitle	7595	ORIGINAL
Author	Caroline.Lin <caroline.lin@qsitw.com>	ORIGINAL
Cc	'haw.chen ' <haw.chen@qsitw.com>	ORIGINAL
Company	Quanta	ORIGINAL
Custdian	Chen, Haw	ORIGINAL
Docdate	10/16/2008 13:05:41 -0700	ORIGINAL
Docid	QUANTA_HAW_00035744	ORIGINAL
DocType	Message	ORIGINAL
Filepath	haw0808/0808/7595	ORIGINAL
FolderID	haw0808	ORIGINAL
From	caroline.lin@qsitw.com	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	0c1311180f309a62c22988a5e0ddf365	ORIGINAL
Lang	English	ORIGINAL
Pgcount	2	ORIGINAL
Subject	RE: RFQ Discussio with Amino-san	ORIGINAL
To	'Sally.huang ' <Sally.huang@qsitw.com>	ORIGINAL

EXHIBIT 26

From: Sally.huang Huang Ya-Ping <MAILER-DAEMON>
Subject: RE: [TOP]Letter of Invitation (draft) - eSourcing on Jan.22 06:30PM (U.S. Central Time)
To: caroline.lin Lin Chu-Tsu; haw.chen Chen Shang-Hao
Cc: Hiko.lin Lin Yen-Cheng
Date: Mon, 19 Jan 2009 10:37:52 +0000
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
NC./OU=QMATEMAIL/CN=RECIPIENTS/CN=SALLY.HUANG

Dear Caroline:

Target: Number 3, try from 24.4 oh

Dear Haw:

Can you work out some kind of agreement with Pioneer, not to be too extreme? They only have approximately 400k left, no reason for them to fight for 3rd place, right?

Sally Huang
Quanta Storage Inc.
OS BU, Sales Division
TW office: +886-33288090 ext.1995
Cell:+886-955707205

-----Original Message-----

From: Caroline.Lin Lin Chu-Tsu [mailto:caroline.lin@qsitw.com]
Sent: Monday, January 19, 2009 2:08 AM
To: haw.chen Chen Shang-Hao; Sally.huang Huang Ya-Ping
Cc: Hiko.lin Lin Yen-Cheng
Subject: [TOP]Letter of Invitation (draft) - eSourcing on Jan.22 06:30PM (U.S. Central Time)
Importance: High

Dear Haw & Sally,

Pls see the attachment for your reference and also reserve your time to attend the con-call during auction.

Currently, Edward is still working on the most realistic TAM for 1.5C DDV-RW SATA.
I'll send out the proposal of our action in E-Auction in Mon.

By the copy to Hiko, would you pls share the con-call host code to me:

* Dial-in Number:

In USA: +1-866-589-0896

Outside USA: +1-630-424-1466

Thanks & Best Regards,

.....
Caroline Lin Lin Chu-Tsu
Quanta Storage Inc. | OSBU Sales
Tel(USA): 1-832-661-1496
Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile: 886-(0)963-092971
E-mail: Caroline.Lin@qsitw.com
.....

To: HP mPC ODD Supplier



Attached is an advanced copy of eSourcing invitation letter. I am still running RFQ volumes and will finalize this weekend.

Regards,

Edward Yambao, CPIM, C.P.M.
Procurement Commodity Manager
Notebook GBU Supply Chain
Hewlett-Packard Co.
ph: (281) 518-9659

Note: This email may contain confidential or proprietary information of Hewlett-Packard Company. Prior to forwarding this email or any confidential or proprietary information contained herein, you must ensure that the intended HP-internal recipients have a business "need-to-know" and/or have been designated by the author as approved recipients. Do not distribute outside HP or to any external third party without the express permission of the author.

CERTIFICATE OF TRANSLATION ACCURACY

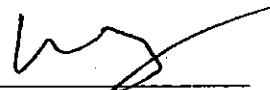
State of California
October 22, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00051033, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 27

Date/Time	Length (mins:secs)	From Number	From Name (Company)	To Number	To Name (Company)	Source Bates Number
6/3/08 8:34 PM	1:00	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031208
6/18/08 8:35 AM	text message	832-661-1496	Virginia Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031208
6/20/08 4:51 PM	11:00	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031208
6/23/08 8:30 PM	17:00	832-661-1496	Virginia Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031208
6/24/08 1:35 PM	6:00	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031208
6/24/08 9:45 PM	3:00	832-661-1496	Virginia Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031208
6/24/08 9:50 PM	8:00	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031208
7/1/08 10:13 AM	5:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/1/08 10:56 AM	1:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/1/08 4:33 PM	11:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/2/08 11:02 AM	2:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/2/08 11:19 AM	2:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/2/08 11:20 AM	1:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/2/08 11:38 AM	2:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/8/08 1:43 PM	2:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384136
7/8/08 3:30 PM	16:00	832-661-1496	Virginia Lin or Sally Huang (QSI)	281-660-8363	JC Lim (Lite-On/PLDS)	ODDCIV-005384136
7/14/08 11:51 AM	13:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031316
7/16/08 6:09 PM	3:07	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031316
7/16/08 6:56 PM	2:39	832-661-1496	Virginia Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
7/23/08 1:50 PM	8:40	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031316
7/23/08 2:42 PM	:51	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031316
7/25/08 10:10 AM	2:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384261
7/25/08 11:05 AM	6:00	832-661-1496	Virginia Lin or Sally Huang (QSI)	281-660-8363	JC Lim (Lite-On/PLDS)	ODDCIV-005384261
7/25/08 1:34 PM	7:30	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031316

7/31/08 4:14 PM	9:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	ODDCIV-005384261
8/15/08 3:40 PM	2:54	832-661-1496	Virginia Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
8/20/08 11:49 AM	2:29	832-661-1496	Virginia Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
8/20/08 12:26 PM	:21	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031316
8/20/08 4:13 PM	7:16	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Virginia Lin or Sally Huang (QSI)	HLDS_CIV0031316
9/18/08 4:23 PM	:30	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
9/23/08 10:30 AM	:12	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/2/08 3:20 PM	:04	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/6/08 10:36 AM	:31	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/9/08 10:23 AM	:34	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/9/08 3:47 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/9/08 3:48 PM	3:08	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
10/9/08 3:55 PM	15:58	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
10/10/08 10:26 AM	:30	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/10/08 10:41 AM	:03	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/10/08 10:45 AM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/10/08 10:57 AM	:43	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/13/08 11:23 AM	:23	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/17/08 5:02 PM	:37	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/17/08 5:16 PM	:25	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
10/17/08 5:34 PM	:16	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
10/17/08 5:51 PM	:10	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/20/08 5:28 PM	8:36	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/21/08 2:23 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/21/08 3:20 PM	:24	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316

10/21/08 4:49 PM	:25	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/21/08 6:25 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/21/08 6:47 PM	14:27	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
10/22/08 6:26 PM	:26	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/22/08 8:20 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/23/08 1:15 PM	11:10	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/23/08 3:53 PM	:32	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/23/08 4:01 PM	:13	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/24/08 1:04 PM	:23	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/24/08 2:32 PM	:29	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/24/08 3:34 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/24/08 3:46 PM	:02	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/24/08 4:51 PM	6:46	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/27/08 1:43 PM	:25	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/27/08 2:28 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/27/08 3:18 PM	:02	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/27/08 5:55 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/28/08 11:08 AM	:04	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/28/08 11:08 AM	:03	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
10/29/08 10:34 AM	1:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	ODDCIV-005424390
10/29/08 10:34 AM	2:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	ODDCIV-005424390
10/29/08 12:43 PM	:25	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/13/08 11:29 AM	:53	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/24/08 11:36 AM	:03	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/24/08 11:37 AM	:41	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316

11/24/08 11:38 AM	1:00	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
11/24/08 11:41 AM	:10	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/24/08 11:42 AM	6:06	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/25/08 2:23 PM	:24	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/25/08 4:10 PM	:04	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/26/08 10:30 AM	:08	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
11/26/08 11:56 AM	:02	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/1/08 3:39 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/2/08 2:50 PM	:28	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/4/08 1:28 PM	:04	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
12/4/08 2:04 PM	:03	832-661-1496	Caroline Lin or Sally Huang (QSI)	832-651-4367	Eugene Yang (HLDS)	HLDS_CIV0031316
12/4/08 2:04 PM	:02	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/9/08 11:15 AM	10:12	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/10/08 9:51 AM	3:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	ODDCIV-000359524
12/12/08 1:46 PM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/15/08 12:49 PM	:22	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/15/08 3:03 PM	1:00	832-661-1496	Caroline Lin or Sally Huang (QSI)	281-660-8363	JC Lim (Lite-On/PLDS)	ODDCIV-000359524
12/16/08 11:16 AM	:01	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/16/08 2:43 PM	:46	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/16/08 3:35 PM	:09	832-651-4367	Eugene Yang (LGE/HLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	HLDS_CIV0031316
12/18/08 1:29 PM	1:00	281-660-8363	JC Lim (Lite-On/PLDS)	832-661-1496	Caroline Lin or Sally Huang (QSI)	ODDCIV-000359524

EXHIBIT 28

Subject: RE: Jul/17 lunch
Date: Tue, 15 Jul 2008 20:10:31 +0800
Thread-Topic: Jul/17 lunch
From: Wesley.Cheng Cheng Tsan-Wei <Wesley.Cheng@qsitw.com>
To: haw.chen Chen Shang-Hao <haw.chen@qsitw.com>
Cc: Shu-ming.Tzeng Tzeng Shu-Ming <Shu-ming.Tzeng@qsitw.com>
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
NC./OU=QMATEMAIL/CN=RECIPIENTS/CN=WESLEY.CHENG

OK. Ah. but she is not my Susie.

From: haw.chen Chen Shang-Hao
Sent: Tuesday, July 15, 2008 7:41 PM
To: Wesley.Cheng Cheng Tsan-Wei
Cc: Shu-ming.Tzeng Tzeng Shu-Ming
Subject: RE: Jul/17 lunch

Do you want to join us? I guess the Susie is your Susie...

From: Jerry Hsieh [mailto:jerry.hsieh@pldsnet.com]
Sent: Tuesday, July 15, 2008 7:35 PM
To: haw.chen Chen Shang-Hao
Cc: Shu-ming.Tzeng Tzeng Shu-Ming; Fannie Lee; Susie Peng
Subject: Re: Jul/17 lunch

Haw,

OK, Welcome! Thanks!

Regards,

Jerry Hsieh

Sr. Sales Manager, Optical Disk Drives Business Unit
Philips & LITE-ON Digital Solutions Corp.
16F, 392, Ruey Kuang Rd., Neihu, Taipei 114, Taiwan, R.O.C.
Tel: 886-2-8798-2798 ext 8387/Fax: 886-2-5581-0868
new email address: jerry.hsieh@PLDSnet.com

<haw.chen@qsitw.com>

2008-07-15 7:22 PM :

To <jerry.hsieh@pldsnet.com>

cc <Shu-ming.Tzeng@qsitw.com>

Subject Jul/17 lunch



Jerry,

Sorry that our HP account manager is on a trip. She cannot join us this time. Shu-ming for Dell and myself, sales for Acer, will join the lunch.

Thanks,
Haw

CERTIFICATE OF TRANSLATION ACCURACY

State of California

October 22, 2013

Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00016940, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 29

From: Sally.huang <Sally.huang@qsitw.com>
Subject: Q1 Quotation
To: haw.chen Chen Shang-Hao
Cc: evon.yu Yu Yi-Feng
Date: Fri, 21 Nov 2008 10:50:03 +0000

Dear Haw:

Ambrose said that two other companies quoted less than \$24. I believe it's false but he wants us to quote a bit more than \$24 "if need 30% share". The following info is what I gathered from a couple of companies:
HLDS: they said there's no way they will quote lower than \$24. Their current quote is less than \$24.5.
PLDS: their current quote is more than \$24.5. Their boss said that they need to be profitable and they only make exceptions for HP.
Need to respond by Monday.
I believe we can quote \$24.4.

As for slot in DVD RW, he said \$36 is too ridiculous, \$33 is reasonable. Then... should we give him \$33.5 or \$34?

Dear Evon:

Please help to update P/L for Haw's reference.

Ps: Ambrose pushed Pioneer Omori-san (I heard that it's Nogiri-san's boss), told him that if there is further delay, it would affect business.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205



QUANTA_HAW00043019PCT

CERTIFICATE OF TRANSLATION ACCURACY

State of California

October 22, 2013

Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00043019, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 30

From: Sally.huang Huang Ya-Ping <MAILER-DAEMON>
Subject: RE: QSI share at WIS for STN projects.
To: evon.yu Yu Yi-Feng; haw.chen Chen Shang-Hao
Cc: Shu-ming.Tzeng Tzeng Shu-Ming
Date: Tue, 28 Oct 2008 07:51:52 +0000
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
INC./OU=QMATEMAIL/CN=RECIPIENTS/CN=SALLY.HUANG

PLDS said their share is approximately 10%.

They said that they could only do this much for this year because HP stole the factory's capacity.

They hinted that for the next year's new model they will be more aggressive.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205

From: evon.yu Yu Yi-Feng
Sent: Tuesday, October 28, 2008 3:47 PM
To: haw.chen Chen Shang-Hao
Cc: Shu-ming.Tzeng Tzeng Shu-Ming; Sally.huang Huang Ya-Ping
Subject: RE: QSI share at WIS for STN projects.

Dear Haw,

After check with Sheila, below is the share status of SMD.

HLDS =38%

QSI+SONY(約4%)=28%

PLDS=> 12%

pioneer=>9%

TSST =>8%

PCC => 5%



If any please let me know. Thank you.

Best Regards

Evon Yu

Quanta Storage Inc.

**Address: 3F No.188,
Wenhua 2nd Rd.**

Guishan Shiang, Taoyuan County 333, Taiwan (R.O.C.)

Tel: 886-3-3288090 #1116

Fax: 886-3-3277500

From: Shu-ming.Tzeng Tzeng Shu-Ming
Sent: Tuesday, October 28, 2008 3:06 PM
To: Sally.huang Huang Ya-Ping; evon.yu Yu Yi-Feng
Cc: haw.chen Chen Shang-Hao
Subject: QSI share at WS for STN projects.

Hello Sally & Evon,

I just got the share information (including 9.5mm & BD) for STN projects at WIS as below.

FYI.

1. HLDS 41%
2. QSI 17%
3. TSST 14%
4. PLDS 10.5%
5. Pioneer 9.8%
6. PANA 7%

Above ranking are based on the pull data during Jan'08~Sep'09.

Regards,

Quanta Storage Inc.

Shu-ming.Tzeng

Sales & Marketing Div.

Tel:886-3-3288090 ext.1108

Fax:886-3-3277500

E-mail:shu-ming.tzeng@qsi.tw

Address: 4F NO.188,
Wen Hua 2nd Rd.

Kuei Shen Hsiang,
Tao Yuan Shien, Taiwan

CERTIFICATE OF TRANSLATION ACCURACY

State of California

October 22, 2013

Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00037747, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 31

USA Region:	
Customers:	Code:
Gateway	TAG
Apple	PAL
Intel	INT
Lexmark	LEX
Motion	MOT
Dell	WIN
HP	Top
Optiarc US	ARC-US
Solelectron	SOL

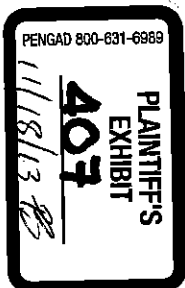
Japan Region:	
Customers:	Code:
EPSON	SON
NEC CP	KENCP
BOSS	BOS
Fujitsu	JET
IBM	BIL
Toshiba	BOI
Sony VAIO	NEO
Optiarc JP	ARC-JP
Buffalo	BUF

APC Region:	
Customers:	Code:
聯想	VOL
頂星	STA
SONY China	ARC-CN

EMEA Region:	
Customers:	Code:
Medion	MDI
NEC CI	KENCI
NEC CM	KENCM
FSC	FOX
Gericom	GER
Optiarc-EU	ARC-EU
Optiarc Singapore	ARC-SGP

ODM Region:	
Customers:	Code:
QCI	OWN
Compal	COM
Wistron	WIS
Inventec	EVA
Mitac	MAX
Clevo	CLV
Uniwill, ECS	UNO
Twinhead	TED
ASUS	SUS
ASUS ALPHA	AAA
MSI	MSI
Acer	STN
Infinity	INI
Flexonics	FEX
Pioneer	PIO

ODM Region:	
Customers:	Code:
FIC	CIF
Zenitron	ZEN
NU	NU
Averatec	TEC
Foxconn	COX
Arima	AMI
Others	XYZ
BenQ	BEN
GigaByte	GBT
Dixon	DIO
Optiarc TW	ARC-TW
Lite-on	TON
A- Open	AOP



Code:	Customers:
AAA	ASUS APLHA
AMI	Arima
VOL-JP	Lenovo International
BOI	Toshiba
BOS	BOSS
BEN	BenQ
CLV	Clevo
COM	Compal
COX	Foxconn
UNO	Uniwill, ECS
EVA	Inventec
CIF	FIC
FOX	FSC
GBT	GigaByte
GER	Gericom
INT	Intel
JET	Fujitsu
KENCI	NEC CI
KENCM	NEC CM
KENCP	NEC CP
LEX	Lexmark
MAX	Mitac
MDI	Medion
MOT	Motion
MSI	MSI
NEO	Sony VAIO
NU	NU
OWN	QCI
PAL	Apple
ARC-CN	SONY China
ARC-EU	Optiarc-EU
ARC-US	Optiarc US
ARC-SGP	Optiarc Singapore
ARC-JP	Optiarc JP
ARC-TW	Optiarc TW
SON	EPSON
STN	Acer
SUS	ASUS
TAG	Gateway
TED	Twinhead
TOP	HP
VOL	Lenovo
WIN	Dell
WIS	Wistron
XYZ	Others
ZEN	Zenitron
DIO	Dixon
SOL	Solectron
INI	Infinity
TON	Lite-on

QUANTA_HAW36953**Metadata**

Applicat	Microsoft Excel	ORIGINAL
Atttitle	2743-Account Code 0530_08.xls	ORIGINAL
Author	KATHY.JI	ORIGINAL
BegAttach	HAW00036952	ORIGINAL
Company	Quanta	ORIGINAL
Custdian	Chen, Haw	ORIGINAL
Datecrtd	10/04/2005 02:24:00 +0000	ORIGINAL
Datesvd	05/28/2008 22:11:33 +0000	ORIGINAL
Docid	QUANTA_HAW_00008529	ORIGINAL
DocType	vnd	ORIGINAL
EndAttach	HAW00036955	ORIGINAL
Famlyrng	HAW00036952 - HAW00036955	ORIGINAL
Filepath	haw0805/0805//2743-Account Code 0530_08.xls	ORIGINAL
FolderID	haw0805	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	82438abe842dbf615d86e9dabc995888	ORIGINAL
Lang	English	ORIGINAL
Last-Author	KATHY.JI	ORIGINAL
Parentid	HAW00036952	ORIGINAL
Pgcount	2	ORIGINAL
Prprties	Attachment	ORIGINAL
Source	Quanta	ORIGINAL

EXHIBIT 32

From: Sally.huang (HUANG Ya-ping) <MAILER-DAEMON>
Subject: RE: Meeting minutes with TSST Tango
To: haw.chen (CHEN Shang-hao)
Cc: Shu-ming.Tzeng (TZENG Shu-ming); evon.yu (YU I-fang)
Date: Mon, 15 Dec 2008 05:23:49 +0000
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
INC./OU=QMATEMAIL/CN=RECIPIENTS/CN=SALLY.HUANG

Sorry, typo, "deny"
HLDS Bruce asks Tango whether 20M for market fund was given
Tango strongly denied
I asked Tango if it's 6M (6M*\$1 each = 6M)
He did not strongly deny

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205

From: haw.chen (CHEN Shang-hao)
Sent: Monday, December 15, 2008 12:08 PM
To: Sally.huang (HUANG Ya-ping)
Cc: Shu-ming.Tzeng (Tzeng Shu-ming); evon.yu (YU I-fang)
Subject: RE: Meeting minutes with TSST Tango

What is this?

Tango said the market fund to STN is not 20M but he didn't delay 6M

From: Sally.huang (HUANG Ya-ping)
Sent: Monday, December 15, 2008 12:03 PM
To: haw.chen (CHEN Shang-hao)
Cc: Shu-ming.Tzeng (TZENG Shu-ming); evon.yu (YU I-fang)
Subject: Meeting minutes with TSST Tango

Exhibit 27A
D. Jeong
04/19/13

K. Schroeder
csr, rpr, crr

Dear Haw:

Tango did share some info about TSST to us and here is some important info

1. TSST didn't belong to Samsung Semiconductor group and they need provide some money to Samsung group.
2. Inventory level including on the way: 2 months (not including Dell). Their target in 2009 is 2 weeks
3. Tango handles all customers logistic/FAE/ODM qualification except Dell logistic
4. Tango said the market fund to STN is not 20M but he didn't delay 6M
5. All shipment are mainly by sea from their factory and around 14 days (cost: US\$0.1, by air:US\$0.8)
6. Shipment in Q3 for TOP is record high. Demand cut a lot last week but cannot stop shipment from factory, so expect the inventory in Dec will be very high
7. Tango said HLDG/TSST factory already stopped any production for 1 month due to high inventory for all customers.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

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Cell:+886-955707205

Metadata

Lang: English

Pgcount: 2

Subject: RE: Meeting minutes with TSST Tango

To: haw.chen

FolderID: haw0811

Docid: QUANTA_HAW_00046718

Docdate: 12/15/2008 05:23:49 +0000

Source: Quanta

_message-id: <58AACE6EEAE9024B9E42C1E8BB6E70050564E605@svrmail.qsinc.com.tw>

DocType: Message

Hash: a59375202ad02a76ee93273dc0ec1d85

Custdian: Chen, Haw

GuessedCharset: UTF-8

Atttitle: 3051

Filepath: haw0811/0811//3051

Cc: Shu-ming.Tzeng ; evon.yu

Company: Quanta

From: Sally.huang <MAILER-DAEMON>

EYE-30266486



STATE OF CALIFORNIA

COUNTY OF SAN FRANCISCO

)
)
)
)
) ss

CERTIFICATION

This is to certify that the attached translations are to the best of my knowledge and belief true and accurate translations from Chinese into English and Korean into English with the following bates numbers:

Chinese into English

QUANTA_HAW_00045535PCT
QUANTA_HAW_00046718PCT

Korean into English

HLDS_CIV2369493PCT
HLDS_CIV2369497PCT
HLDS_CIV2369502PCT
HLDS_CIV2369508PCT
HLDS_CIV2369512PCT


Brandon Carney
Divergent Language Solutions, LLC

State of California, County of San Francisco

Subscribed and sworn to (or affirmed) before me

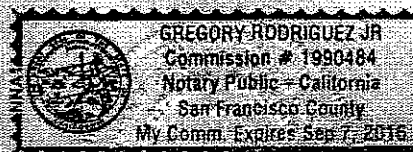
on this 26 day of March, 2013.

by Brandon Carney,

proved to me on the basis of satisfactory evidence

to be the person(s) who appeared before me.

Signature:  - GREGORY RODRIGUEZ JR
NOTARY PUBLIC



DIVERGENT LANGUAGE SOLUTIONS

1300 Page Street, Suite 1B | San Francisco, CA 94117 | p 415.400.4538 | f 415.525.4313
divergent@divergentls.com | www.divergentls.com

EXHIBIT 33

Subject: RE: KU.0080E.017 extra demand
Date: Wed, 3 Dec 2008 18:09:35 +0800
Thread-Topic: KU.0080E.017 extra demand
From: evon.yu Yu Yi-Feng <evon.yu@qsitw.com>
To: haw.chen Chen Shang-Hao <haw.chen@qsitw.com>
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
INC./OU=QMATEMAIL/CN=RECIPIENTS/CN=EVON.YU

I just called HLDS Bruce. He said that their Q4 quote is approximately \$24.5 and no rebate... He said that his company only pulled 70% (FCST 350K-400K). Therefore, they pulled about more than 200K... It looks like it's about the same as us... it's a bit ridiculous... next time we need to bring the best desserts for Ambrose...

For 09Q1, they quote about \$24, but the quote is not final. He said they will not quote under \$24... this week they are continuing to negotiate... their forecast for December is about 120K~150K.

Tomorrow Sally will go and check with Susie on her company's status...

I think forecast will be adjusted again because H's quote is not final...

Best Regards

Evon Yu

Quanta Storage Inc.
Address: 3F No.188, Wenhua 2nd Rd.,
Guishan Shiang, Taoyuan County 333, Taiwan (R.O.C.)
Tel : 886-3-3288090 #1116
Fax: 886-3-3277500

-----Original Message-----

From: haw.chen Chen Shang-Hao
Sent: Wednesday, December 03, 2008 1:15 PM
To: evon.yu Yu Yi-Feng
Subject: RE: KU.0080E.017 extra demand

But I heard that the HLDS Q4 quote should be at the \$24.7 - \$24.9 level, let me call you in a second

-----Original Message-----

From: evon.yu Yu Yi-Feng
Sent: Wednesday, December 03, 2008 11:34 AM
To: haw.chen Chen Shang-Hao
Subject: FW: KU.0080E.017 extra demand

Dear Haw,

Yesterday I asked Sheila... she said that this upsize's product eMachines anticipate shipping the whole 150K~200K quantity before Christmas. The ODMs are working hard to increase buffer materials. But she is more afraid that housing (normal lead time is 3 weeks) will not be able to get this much materials....



Currently only we and TSST have tested this project,
TSST has approximately 100K in stock, but because several projects could only use TSST's,
Therefore for the 100K she needs to reserve quantity for those projects use,

I feel that our 150K reserve could be used up, even if this material eMachine could not use up in December, there
are other projects that could use it. The worst scenario is to still use it in January, but the more shipped the more
chances for pulling. It will depend what "kind of beef" is presented to get Ambrose to pull more~

I think we could first do the following to get him to commit to the quantity,
220K ==> original net price \$25.2
Over 0~50K, the exceeding portion will give rebate \$0.2 @pcs, net price \$25
Over 50K, the exceeding portion will give rebate \$0.4 @ pcs, net price \$24.8 (Please refer to the attachment for the
PL)

PS: Q3 first quote, she said that there is \$1.0 difference between our price and the price of the first place bid,
therefore HLDS could be at \$24.5,
Bruce said that for November and December price must pull in, they will not follow. So they must still maintain at
around \$24.5...

Best Regards

Evon Yu

Quanta Storage Inc.
Address: 3F No.188, Wenhua 2nd Rd.,
Guishan Shiang, Taoyuan County 333, Taiwan (R.O.C.)
Tel : 886-3-3288090 #1116
Fax: 886-3-3277500

-----Original Message-----

From: Ambrose_Song@acer.com.tw [mailto:Ambrose_Song@acer.com.tw]
Sent: Tuesday, December 02, 2008 2:19 PM
To: evon.yu Yu Yi-Feng; haw.chen Chen Shang-Hao; Sheila Hsu@acer.com.tw
Subject: KU.0080E.017 extra demand

Dear Evon and Haw,

please increasing your KU.0080E.017 to 150k in December. This is extra demand. Forecast 220k
total
in December, while exceed than 220k call off will have incentive. Please have your incentive program
to me.

Thank you for your assistance in this matter and your feedback to this matter is very much
appreciated!!

Ambrose Song
Key Component Procurement
Acer Incorporated
Direct: +886 2 8691 3327
Facsimile: +886 2 8691 3172

Email: ambrose_song@acer.com.tw

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CERTIFICATE OF TRANSLATION ACCURACY

State of California
October 22, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00045156, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 34

差出人: 임봉호 [bonghoyim@hlds.co.kr]
送信日時: Thursday, October 23, 2008 9:56
宛先: 'Kim Hyun Gon'; 'Shin Chi Hyon'; 'Yim Bong Ho'; 'Choi Jin Sung'; 'Choi Jin Young'
件名: 업무연락(지급) -- FW: [Schedule]HLDS Saels Report & PM C.C. (10.23)

フラグの内容: 추가 작업
フラグ: 終了

添付ファイル: HLDS Sales Report_081023.ppt



HLDS Sales
Report_081023.ppt (유첨자료 참조바랍니다.
(관리자회의자료 및 사업계획 작성관련)

Thank you,

B. H. Yim (任 奉 浩)
Account Leader
Overseas Sales Team 1
Sales and Marketing Division
Phone : 82-2-3777-5984
E-mail : bonghoyim@hlds.co.kr

From: Chang Kyung Tae [mailto:ktchang@hlds.co.kr]
Sent: Thursday, October 23, 2008 9:01 AM
To: 'Chang Kyung Tae'; 'Oh Yong Seok'; 'Kyung Bong Choon'; 'Kim Sang Hun'; 'Hyun Chul Son'; 'Yim Bong Ho'; 'Hiraoka Yasuki'; 'Yang Woojin'; '김수현'; 'Jeong Jae Hwan'; 'Kim Young Jin'; '정대화'; '박정훈'; 'Kuruma Shinichiro(車慎一郎)'; '김현수 Kim Hyun Soo'; '안성근 Ahn Sung Keun'; '이장원 Lee Jang Won'; 'Hiraoka Yasuki'; 'Inata Jun'; 'Kuruma Shinichiro'; 'Matsushita Seiji'; 'Takano Hiroki'; 'help1004(Hitachi Taiwan Forwarding)'; 'Kevin Jung'; 'Hong Jin Woo'; 'Bruce Jeong'; 'Inata Jun'; 'Lee Yong sung'; 'Matsushita Seiji'; 'Takano Hiroki'; 'Daniel Hur'

Cc: '박영근'; 'JUN EUN JUNG'; '장경태'; 'Choi Min Ki'; 'Lee Jang Won'
Subject: RE: [Schedule]HLDS Saels Report & PM C.C. (10.23)

수신자 제위

cPC & MS 추가하여 송부드립니다.

감사합니다.

G/O/O/D//L/U/C/K/!!
張慶泰 -KT.Chang
Sales Planning & Marketing Group
Hitachi-LG Data Storage Inc.
T) 82-2-3777-5980
F) 82-2-3777-5995

Tzeny Exhibit 2133
Date: 3/15/17 Name: _____
Lana L. Lopez, RMR, CRR, CCP, CSR No. 9667

HLDS_CIV0884535

From: Chang Kyung Tae [mailto:ktchang@hlds.co.kr]

Sent: Thursday, October 23, 2008 8:54 AM

To: 'Chang Kyung Tae'; 'Oh Yong Seok'; 'Kyung Bong Choon'; 'Kim Sang Hun'; 'Hyun Chul Son'; 'Yim Bong Ho'; 'Hiraoka Yasuki'; 'Yang Woojin'; '김수현'; 'Jeong Jae Hwan'; 'Kim Young Jin'; '정대화'; '박정훈'; 'Kuruma Shinichiro(車慎一郎)'; '김현수 Kim Hyun Soo'; '안성근 Ahn Sung Keun'; '이장원 Lee Jang Won'; 'Hiraoka Yasuki'; 'Inata Jun'; 'Kuruma Shinichiro'; 'Matsushita Seiji'; 'Takano Hiroki'; 'help1004(Hitachi Taiwan Forwarding)'; 'Kevin Jung'; 'Hong Jin Woo'; 'Bruce Jeong'; 'Inata Jun'; 'Lee Yong sung'; 'Matsushita Seiji'; 'Takano Hiroki'

Cc: '박영근'; 'JUN EUN JUNG'; '장경태'; 'Choi Min Ki'; 'Lee Jang Won'

Subject: RE: [Schedule]HLDS Saels Report & PM C.C. (10.23)

Dear All

Please see the attached file for today PM C.C.

Thank you.

G/O/O/D//L/U/C/K/!!

張慶泰 -KT.Chang

Sales Planning & Marketing Group

Hitachi-LG Data Storage Inc.

T) 82-2-3777-5980

F) 82-2-3777-5995

From: Chang Kyung Tae [mailto:ktchang@hlds.co.kr]

Sent: Monday, October 13, 2008 3:30 PM

To: 'Chang Kyung Tae'; 'Oh Yong Seok'; 'Kyung Bong Choon'; 'Kim Sang Hun'; 'Hyun Chul Son'; 'Yim Bong Ho'; 'Hiraoka Yasuki'; 'Yang Woojin'; '김수현'; 'Jeong Jae Hwan'; 'Kim Young Jin'; '정대화'; '박정훈'; 'Kuruma Shinichiro(車慎一郎)'; '김현수 Kim Hyun Soo'; '안성근 Ahn Sung Keun'; '이장원 Lee Jang Won'; 'Hiraoka Yasuki'; 'Inata Jun'; 'Kuruma Shinichiro'; 'Matsushita Seiji'; 'Takano Hiroki'; 'help1004(Hitachi Taiwan Forwarding)'; 'Kevin Jung'; 'Hong Jin Woo'; 'Bruce Jeong'; 'Inata Jun'; 'Lee Yong sung'; 'Matsushita Seiji'; 'Takano Hiroki'

Cc: '박영근'; 'JUN EUN JUNG'; '장경태'; 'Choi Min Ki'; 'Lee Jang Won'

Subject: [Schedule]HLDS Saels Report & PM C.C. (10.23)

Dear All

Please see the PM C.C. schedule as below.

1. Date

- 10/23(Thur.) 09:00 ~ : PM C.C. & PM Report

2. PM C.C. Access No.

- Out of US : 1-816-650-0723

- in US : 888-412-7888

HLDS_CIV0884536

* PW : #019242

If you cannot make it on the schedule, please let me know.

Thank you.

G/O/O/D//L/U/C/K/!!

張慶泰 -KT.Chang

Sales Planning & Marketing Group

Hitachi-LG Data Storage Inc.


T) 82-2-3777-5980

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HLDS_CIV00884535**Metadata**

Box#	HLDS004	ORIGINAL
Company	HLDS	ORIGINAL
Custdian	Luke, Choi	ORIGINAL
Datercvd	10/23/2008	ORIGINAL
Docdate	10/23/2008	ORIGINAL
Docid	HLDS_CIV00884535	ORIGINAL
Famlyrng	HLDS_CIV00884535 - HLDS_CIV00884551	ORIGINAL
Filepath	HSM002:(1) MY_DATA_102109\mail Nov08.pst::0407.msg	ORIGINAL
Filesize	311296	ORIGINAL
FolderID	영업	ORIGINAL
From	임봉호 <bonghoyim@hlds.co.kr>	ORIGINAL
Hash	40dfa330290780a500efced65eee7a45	ORIGINAL
Lang	English_And_Unknown	ORIGINAL
Pgcount	3	ORIGINAL
Prprties	E-mail	ORIGINAL
Subject	업무연락(지급)_FW:_[Schedule]HLDS_Saels_Report_&_PM_C.C._(10.23)	ORIGINAL
Timesent	09:56 AM	ORIGINAL
To	"Kim Hyun Gon" <robinkim@hlds.co.kr>, "Shin Chi Hyon" <schyon@hlds.co.kr>, "Yim Bong Ho" <bonghoyim@hlds.co.kr>, "Choi Jin Sung" <luke@hlds.co.kr>, "Choi Jin Young" <youngchoi@hlds.co.kr>	ORIGINAL


Sales Account Report		HP mPC/ Eugene Yang
Category	Issue	
1. Market / Customer	<ul style="list-style-type: none"> • BD Promotion <ul style="list-style-type: none"> - mPC promote BD COMBO as free upgrade from DVD RW (New 16" & 18" Consumer Notebook => Previously 250\$ cost) - Still Slow demand of BD product <ul style="list-style-type: none"> => EMEA acceptance is getting lower => BD COMBO Demand : From 80~100K/Month => 60~80K/Month => BD Writer Demand : From 5~8K/Month => 2~5K/Month - From 2C 09, mPC is going to set LS function as standard for BD COMBO • Sub Notebook Demand <ul style="list-style-type: none"> - HP's Non ODD Sub Notebook Demand => 2008 : 2.8Mil / 2009 Target : 5.0Mil - mPC will use 8.9" / 10.1" / 10.2" LCD for Sub Note in 2009 (In 2008, only use 8.9") - mPC does not have strong demand of external drive (mPC dropped a plan for using USB external ODD in 2009) • PATA EOL Management <ul style="list-style-type: none"> - mPC is going to complete transition in 2009 Feb. • Notebook Build Target <ul style="list-style-type: none"> - mPC build 3Mil Unit in Sep - Build Target => 3.2M in Oct / 3.0 in Nov / 2.8 in Dec - Still commercial shows strong forecast but consumer market shows slower demand • Adding Flextronics as new ODM from 2009 (1 Project) • LCD Price keeps dropping (According to LGD, 30~50% price drop in 6 months) • Due to strong support of Samsung LCD (for 16"), HP OPP demand using 16" showed strong growth 	

 Data Storage

Sales Account Report		HP mPC/ Eugene Yang
Category	Issue	
2. Competition	<ul style="list-style-type: none"> TSST : <ul style="list-style-type: none"> - 9.5mm LS DVD RW launching : Compete HP Test in July 08 but STEP 2 in 2009 Feb (Still no demand is projected for 9.5mm LS DVD RW) - New 12.7 slim SATA DVD RW Launching (2nd generation) : OPP- Oct / Regular - Dec - Trying to line up BD COMBO in 2009 1Q (Trying to support LS) SNO : <ul style="list-style-type: none"> - Developing LS BD COMBO targeting end of 2008. - 12.7mm DVD RW QSI will focus on Regular and Sony will focus on OPP - Complete line up 9.5mm DVD RW. PLDS : <ul style="list-style-type: none"> - 12.7mm DVD RW Focus on OPP only (Regular support from 09 1.5C) - Under qualification of 9.5mm DVD RW => Line up 2009 Feb - Trying to qual BD COMBO but no interest from mPC. Panasonic : <ul style="list-style-type: none"> Due to low level power management, mPC lost confidence with MEI solution. 	
3. Issues & Requests	<ul style="list-style-type: none"> - 12.7mm DVD RW RFQ for 1C 	

 Data Storage

Sales Account Report		HP bPC/ Eugene Yang
Category	Issue	
1. Market / Customer	<ul style="list-style-type: none"> • Business No sign of slow down. (1.1~1.2M system / Month) • Trying to operate as DTO (bPC & cPC & WGBU) - One Spec => From HLDS JB5 - One Qualification => Target : by end of 2009 • Global Operation - WW Planner / Commodity Manger / Procurement Engineer => Taiwan - Engineering Team => Houston • Invite TEAC as slim product 2nd source supplier due to stable mechanism - Slim SATA DVD-ROM / Slim SATA COMBO / Slim SATA DVD-W • HH DVD-ROM demand keeps decreasing 	
	<ul style="list-style-type: none"> • TSST had issue with SAM HONG Motor with new HH DVD RW - Trying to use SAM HONG as 2nd source of motor but TSST had to do full qualification again due to engineering issue 	
3. Issue & Request	2009 1Q HH DVD RW Price adjust discussion	

 Data Storage


Sales Account Report		HP cPC/James Park
Category	Issue	
1. Customer & Competitors	<p>1) BD Market Situation</p> <ul style="list-style-type: none"> - HP Regional Marketing has started to actively to promote HH BD products in Q4. => HP EMEA : 27K HH BD Writer Special Deal ('08 Sep-Dec) => HP NA : 23K HH BD Combo Special Deal ('08 Nov-Dec) (1st Mainstream Elite PC Sku at \$1049 price range) => As a result the demand for HH BD Combo in '08 Q4 is over 92K (Q3 : 53K) <p><BD Combo Competition></p> <ul style="list-style-type: none"> => TSST : Delay in line-up Oct '08 => After Mar '09 (Management conflict with Toshiba) / '09 Q1 Price \$79 PLDS : Line-up by end of '08 Oct / '08 Q4 Price \$85 (Sustain) SNO : No definite plans due to Not being able to support LS <p><BD Writer Competition></p> <ul style="list-style-type: none"> => TSST : Planning Line-up from 2H '09 PLDS : Planning Line-up from Q3 '09 SNO : No definite plans due to Not being able to support LS <p>- PLDS BD-ROM plans</p> <ul style="list-style-type: none"> => Proposed to HP on lining-up a Low cost/performance BD-ROM for '09 Summer Cycle ('09 Mar/E) (Original purpose for BD-ROM was for A/M focus) => Proposed price \$50 in '09 Q2 (Est. BOM Price mid \$30s) => If lined-up, it is expected to be used in a BD-ROM + HH DVDRW platform for a \$799-\$899 cost sku. => HP Marketing has delayed final decision until supplier's '09 Q2 price release. (HP procurement's estimated BD Combo Price : \$75 ('09 Q1), \$70 ('09 Q2). 	
	<p>2) cPC & bPC Unification of Drive and Qualification (Olympiad Pjt)</p> <ul style="list-style-type: none"> => 1st Step : JB5 Spec unification (Ming TFT leader) but different Qualification procedure Common JB5 for both cPC & bPC (cPC Running change after bPC Qual completion) Apply this to rest of the future drives => 2nd Step : Maximize the Common Areas of Qualification btw cPC & bPC => Ming's Mile Stone : by June, '09 => HP Top Management prefers TTL consolidation of the Qualification as well but Ming thinks that it can not be done. (Olympiad Pjt is for All Major PC components) <p>3) Competitor Change</p> <ul style="list-style-type: none"> => SNO has announced (11/22) that it will Not support the current Commodity HH drives and instead will focus on HH BD & Slim Slot drives. (The current HH DVDRW inventory will be supplied until '09 Spring (~Jan, '09) => HP Procurement (YP) has started talks with Pioneer as new supplier in 2009/E or 2010. [HP Data Storage] 	
-4-		

Sales Account Report

HP cPC/James Park

Category	Issue
2. Biz. Issue & Request	<ul style="list-style-type: none">• Need to maintain Qualification SKDL- JB5 : Need to finish qualification by 11/E. (Sole Supplier)- JBC2 : Need to finish qualification by 11/E (Maintain Major Supplier)- JR11 : Need to finish qualification by 11/E <p>(Upside in bPC side due to Motor issue with TSST H633N (Sam Hong Motor)) => TSST decided to compensate HP cPC of \$2M for the LS Encoder PFC disc touch issue for the same H633N model.</p>


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 HLL Data Storage

Sales Account Report		Microsoft/James Park
Category	Issue	
1. Customer & Competitor	Xbox's Sep Sales Increase due to Price cut - Xbox (Arcade) : \$279.99 => \$199.99 ('08 Sep.) - '08 Sep Sales Result : Wii => 667K (Aug : 453K) xBox => 347K (Aug: 195K) : 78% increase PS3 => 232K (Aug: 185K)	
	Class Action Lawsuit Against MS xBox - Microsoft is facing a class action lawsuit for the Xbox 360's chronic breakdown problems. (RR0D) (Although MS has already extended warranties for "RR0D") - A Sacramento County complaint accuses Microsoft of not only manufacturing a known defective product but of deliberately hiding the failure rate, encouraging customers to buy without warning them that their system will likely fail. - The suit calls for a refund program that lets dissatisfied owners obtain a refund and would also demand that Microsoft give up profits from the Xbox 360 as punishment. - No comment from MS as of yet.	
2. Biz. Issue & Request	Regarding COQ - COQ Amendment was received by MS and HLDS feedback to expected by 10/20 th WK - MS is planning to release the detailed plans on the joint verification as well as the description on 21K representative samples by 10/27 th WK.	
	Current Y3(-018) Drive SKDL - SQR : 10/27 th WK (including MS Audit) - CQR : 1/19 '09 - PV : 3/9 '09 - MP : 3/E '09 Regarding New Y4 Drive - MS is pushing HLDS to undertake the Spec review and RFP on Y4 Drive (Mustang Pk) ASAP. - MS wants HLDS to start Y4 development in Jan, '09 and meet the RTM target of Mar 2010. - MS is insisting on having a management meeting in 11/10 (JP) in regards to Y4. (Roy Harlin: Director of Program Mgt) - HLDS has replied to MS that until the following issues has been clearly decided upon, we will not be able to start review for Y4 RFP. => Resolve the COQ issue. => Mutual agreement on final line-up SKDL of Y3 drive (-018) and Supply Plan including EOL.	

-6-

HL Data Storage


Sales Account Report		Sales 3 Team (Lenovo)
Category	Issue	
1. Market / Customer	<ul style="list-style-type: none"> • Lenovo's plan to acquire FSC <ul style="list-style-type: none"> - Simens intends to exit from its venture - Estimated value : \$1.34 billion - Situation is not favorable to Lenovo - Weakening demand in the European market - Lenovo share in China has been decreasing (fell to 25% in 1st Q from 30%) • Lost PC market share in 3Q <ul style="list-style-type: none"> - 7.3% (vs 7.8% in Q3 '07) - Lenovo's shipment growth : 8% vs 15% of PC industry - Both U.S professional market and China market slowed in the quarter 	
2. Competition	<ul style="list-style-type: none"> • QSI confirmed \$25 for LC 12.7mmDVD-W in Nov. & Dec. (HLDS \$27 in Nov. / \$26.8 in Dec.) • SNO H/H Q4 share : DVD 15% / DVD-W 5% 	
3. Biz. Issue	<ul style="list-style-type: none"> • Q4 Share Allocation Result <ul style="list-style-type: none"> - H/H : Received major share both for DVD & DVD-W (35%) - Slim <ul style="list-style-type: none"> . 12.7mmDVD-W (LI) : 70% in Q4 . 12.7mmDVD-W (LC) : 50% in Oct. / Nov. Dec. still under discussion . 9.5mmDVD-W (LI) : 35% in Q4 • JRS13 Quality Issue <ul style="list-style-type: none"> - 2860 line DPPM in wk 41 (23 / 8041) / Symptom : can not recognize DVD - 1st FA with Lenovo Quality manager : all 23 pcs of NG drives NDF - Currently Japan R&D engineer is in SZ for further investigation. • JRS8 additional order <ul style="list-style-type: none"> - Received 5.4k of additional order and waiting for additional. - FRU demand : 22k but currently re-checking the demand. 	
-7-		 Data Storage

DELL/Jason Kim		
Category	Issue	Remark
1. Customer	<ul style="list-style-type: none"> Overall Sales decrease due to economic situation N/B Build target was revised from 24M to 21.6M for FY09 Currently, Dell sales target hit rate is expected to be around 70% monthly basis. The most impact is coming from the commercial sector. more than 50% of total sales comes from US Market and most sales is for business client, especially financial business customer. Due to the current economic issue in U.S, Dell is getting negative impact directly. 	
2. Competitor	<ul style="list-style-type: none"> SNO : <ul style="list-style-type: none"> No announce for HH Biz. Drop. In QPP on Oct.21, they still offered HH Product refresh in Q1/Q2 SATA Slot BD Combo Inventory issue : 60K as of Sep.End and this inventory is giving impact to HLDS FCST *SNO Drive Pull-out : Jul – 11.5K / Aug – 7K / Sep – 4K 	
3. Biz. Issue	<ul style="list-style-type: none"> IN : Slim drive for Jan. TAM (12.7mm Tray/Slot DVD-W, 9.5mm Tray DVD-W) <ul style="list-style-type: none"> Request additional 10~15% share for compensation of BD Combo sales loss Need to start R1S mass production ASAP to secure 40% share from Nov. onward Business award for external drive(R1S & BC1S) – pending due to cost <ul style="list-style-type: none"> Dell target : \$48.00/FY10 Q1 TSST keeps approaching Dell for last minute change for vendor selection 	

Sales Account Report

Apple / Frank Ahn

Category	Issue											
2. Customer	<ul style="list-style-type: none">New MacBook, MacBook Pro, MacBook Air were introduced on 10/14.CQ3 Financial Report was released on 10/21											
			2007				2008					
			Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
	Qty	DT	626	634	817	977	3,054	856	943	936	910	3,645
		NB	891	1,130	1,347	1,342	4,710	1,433	1,553	1,675	1,708	6,369
		Total	1,517	1,764	2,164	2,319	7,764	2,289	2,496	2,611	2,618	10,014
	Year/Year	DT	2%	26%	34%	53%	27%	37%	49%	15%	-7%	19%
		NB	79%	42%	37%	36%	45%	61%	37%	24%	27%	35%
		Total	36%	33%	34%	44%	37%	51%	41%	21%	13%	29%
	Q / Q	DT	-2%	1%	29%	20%		-12%	10%	-1%	-3%	
NB		-8%	27%	19%	0%		7%	8%	8%	2%		
Total		-6%	16%	23%	7%		-1%	9%	5%	0%		
• CQ1 forecast : Conservative due to WW Economy Crisis (HLDS 9.5mm Slot SD forecast Q4 990K=>Q1 381K)												
3. Competitor	• Panasonic : back in the game for 12.7mm Slot SD (so far, no issue found)											
4. Biz. Issue	• RU1S-1 CD-R/RW writing fail issue (HZ produced drives only. 110K screening)											
	• RU1S-1 Media going under eject lever issue (already seeing some field return due to this issue)											
	• R1S-1 Qualification Issues											
	=> violent eject issue, multiple initialization issue, cannot inject issue, etc.											
	Need to fix all the issues and submit the updated samples by 10/29 => final chance											
5. Request to HQ	Apple is questioning why none of the issues was found during HLDS internal testing.											
	• Chamfered ODD design for 12.7mm Slot from '09 Summer project											
	• CQ3 QBR on 11/11 (Postmortem Analysis Meeting on 11/10)											
	• Supplier Responsibility Audit on 11/27-11/28											
5. Request to HQ	• Need to revisit CQ1 production plan based on the updated forecast											
	• Need to find the better way to support Apple qualification (information sharing, reporting issues found during internal testing, etc)											

 Data Storage

HLS Data Storage

Sales Account Report

Acer/ Bruce Jeong

Category	Issue
1. Market/Customer	<ul style="list-style-type: none"> • Acer '09 Biz. Plan (Official announce用) <ul style="list-style-type: none"> - NB PC : 40M (including UMPC 15M), DT PC : 7M - Procurement Internal plan is NB PC 35M, DT PC 6M • Q4 PC Build Plan : NB 4.9M, DT 1.8M <ul style="list-style-type: none"> → HLDS SOM : Slim 2M (41%), HH 0.9M (50%) → Current NB PC order is around 1.6M and NB Production status is stable, so actual pull out is almost same as FCST. • Y2009 9.5mm ODD Attach Plan : 2M units including slot(70%) and tray (30%) • Battery, HDD, LCD Panel Stable Supply and enough inventory except 8.9 inch LCD Panel <ul style="list-style-type: none"> → 8.9 inch supply tight, but they had still 3M LCD Panel Acer own inventory at Hub.
2. Competitor	<ul style="list-style-type: none"> • TSST : Offered aggressive price, but they didn't get more share as requested. Q4 Under 10% • Sony : HH DVD-RW production at Foxconn SZ and supported to only Foxconn. • QSI : Slim DVD-RW focusing, but not competitive price. • PLDS : From Sep. pull out Q'ty increased and over 200K. (By Aug. under 100K) • PCC : 12.7mm PATA BD Combo stock around 40K at hub and Low cost Slim DVD-RW development plan with Sanyo OPU for 2009 Biz.
3. Issue & Request	<ul style="list-style-type: none"> • R2 Improved new FW and ECN Release by 10/24 (Re-qual. Project : 18 個) • Pull in R1, R2 Supply schedule to avoid any shortage in early of Nov. • 9.5mm Slot DVD-RW(RU1S) tooling modify to meet the same position with PCC for LED and eject. • R3 Qual. Sample on time delivery by 10/27

HLDS Data Storage

Sales Account Report

Asus/ Young Kim

Category	Issue
1. Market/Customer	<ul style="list-style-type: none"> • Asus Sales Situation in Sep/Oct <ul style="list-style-type: none"> - Sep : 840K (Hit in this year), Oct : Expect 650K , - 3Q : 1.8M, but less than target(2.2M), - 4Q : Target is 2M, but expect around 1.6M → This year NB shipment will be around 5.8M (less than 30% growth in '08) • '09 plan still unclear <ul style="list-style-type: none"> - Asus internal '09 sales target was 10M(W/O Eee) around Aug, but due to this year sales slow, Target will be downgraded and notified soon. • 3Q ODD Pull out <ul style="list-style-type: none"> HLDS: 1M(55%), TSST : 550K(40%), PCC : 220K(12%) * HLDS 4Q FCST 800K/ TAM 1.6M • Keep requesting 12.7mm DVD-W price down(\$24.0 in Q4)
2. Competitor	<ul style="list-style-type: none"> • PCC : Try to make up lose share in Q3, keep asking Asus for more volume • TSST : Gain PCC's share in Q3, 12.7mm SATA DVD-W share keep increasing(30→40%)
3. Issue & Request	<ul style="list-style-type: none"> • JRS14 Shortage is very critical , must pull in the schedule since HLDS is sole vendor. • Due to R1 version Change, R1 pull out for Oct will be less than 50K only. (Asus need more time to make new BOM with new R1)

HLL Data Storage

Taiwan Team- Shanghai

Product : OS

Date : 10/23/2008

ODM

Description

News

✓ Taiwan-based NB component makers turn conservative about investment in Vietnam

A number of Taiwan-based makers of components for notebook PCs were originally interested in investing in Vietnam to set up an alternative production base to China, but they are now hesitating about such investment as they consider drastic inflation and tight credit for businesses operating in Vietnam in Taiwan.

Compal's Vietnam investment will continue, due to the serious problems arising from employee strikes, the company is planning to postpone parts of the manufacturing volume by 2-3 quarters, and will create a operation management system to lower the risk of employee issues

✓ Main 4 ODM makers' Sep result

First-tier notebook makers: Performance, September 2008 (US\$/B)				
Company	Sep 08 revenues	M/M	Y/Y	Notebook shipments
Quanta	1.89	0.3%	(22.63%)	3.3 million (Sep 2008)
Compal	1.42	32.23%	10%	2.6 million (Sep 2008) 6.9 million (3Q08)
Wistron	1.53	44.46%	67.79%	N/A
Inventec	1.24	11.43%	75.75%	N/A

Date : 10/23/2008	
ODM	Description
News	<p>* <u>Compal to become the biggest notebook supplier for Toshiba in 2009</u></p> <p>:- Biggest supplier will pass from Inventec to Compal Electronics. Toshiba will also add Pegatron Technology as one of its notebook OEM partners next year.</p> <p>* <u>Acer to transfer netbook orders to Compal and Wistron next year. Quanta left out</u></p> <p>Acer is planning to outsource orders for 15 million Aspire one netbooks in 2009 to Compal Electronics and Wistron.</p> <p>Quanta Computer will be phased out the production chain of the second generation Aspire one by the second quarter of 2009.</p>

Sales Account Report			Japan OEM Team
Date : 23th of Oct, 2008 Name : Hiraoka			
Item	Subject	Description	
Gen Inf.	Customers	Fujitsu	<p><u>-Fujitsu plan for Q4</u> 12.7mm DVD-W TAM(Q4):350k→310k Fujitsu decreased production plan for 12.7mm DVD-W due to slow sales in overseas market. We will try to keep the Qty as original plan(120k/Q4).</p> <p><u>-Competitor situation</u> PCC: They could not launch the Slim BD-Combo as scheduled (Oct) due to poor quality. Therefore, Fujitsu has only launched 1 model for their New model (their original plan:4 models). SNO: They will start to deliver 12.7mm SATA Slim DVD-W to Shimane from E/Oct. (40K/M)</p>
		Toshiba	<p><u>Toshiba plan for Q4</u> 12.7mm DVD-W TAM: 3.5M⇒2.7M⇒2.3M We have proposed the Q4 price of 12.7mm DVD-W to Toshiba with 750K SOM.(Q4:USD\$24.7) ⇒The price will be fixed by 24/Oct.</p> <p><u>Toshiba 2009 model</u> They are considering to adopt Slot model for both 12.7mm and 9.5mm DVD-W from Apr/2009. 12.7mm DVD-W TAM: 790K/Year, 9.5mm DVD-W TAM: 400K/Year</p>
		NECP	<p><u>- '09 BD Strategy of NECP</u> NECP will increase slim BD-W volume and decrease slim BD Combo volume due to Japan market situation from Q1 next year. (Detailed portion will be decided on 10/27.)</p> <p><u>- Q4 Share Status</u> H/H : 100% HLDS besides BD-W(50%, PCC) Slim : Combo (HLDS 70%, PCC 30%), 12.7 SM(HLDS 50%, SONY 30%, PCC 20%) 12.7 BD-W (HLDS 50%, PCC 50%)</p> <p><u>- Events</u> 1. HZ Factory Audit was held on 10/9. 2. Vendor conference will be held on 10/28. CEO and Hiraoka TL will attend. 3. Q3 QBR will be held on 11/20 in NECP HQ.</p>

HLDS_CIV00884538**Metadata**

Atttitle	HLDS Sales Report_081023.ppt	ORIGINAL
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Company	HLDS	ORIGINAL
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EXHIBIT 35

From: Anita.Yin@qsitw.com
Sent: Wed, 19 Jan 2005 02:42:13 GMT
To: Billy ReynoldsPHILIPS@PHILIPS
Anita.Chang@qsitw.com; Cherry.Chen@qsitw.com; Darlo PerezPHILIPS@PHILIPS;
David.Chao@qsitw.com; Dian van WelPHILIPS@PHILIPS; harlem.yang@qsitw.com; Leland
CC: KeyPHILIPS@PHILIPS; Michael.Chuang@qsitw.com; Nadine van der SchansPHILIPS@PHILIPS;
nelson.chang@qsicn.com; rex.Lee@qsitw.com; Ruby HK ShiehPHILIPS@PHILIPS; Shu-
ming.Tzeng@qsitw.com; Thomas van der ZijdenPHILIPS@PHILIPS; voka.chen@qsitw.com; Volvo
LeePHILIPS@PHILIPS; Darlo PerezPHILIPS@PHILIPS
Subject: RE: FW: ***Important Announcement - Change effective Jan 31st***

Yes, we not only will do the price and T&C comparison. We will have our legal
to review as well.

In the mean time, could you please call up all suppliers account managers to
against this?

I already called Lite-On and asked them to against IEC also.

Anita Yin

(O)886-3-352-5555 ext. 1120

(C)886-936-126-357

(F)886-3-3218180

From:billy.reynolds@philips.com [mailto:billy.reynolds@philips.com]
Sent: Wednesday, January 19, 2005 10:32 AM
To: Anita.Yin
Cc: Anita.Chang 張雅慧; Cherry.Chen 陳碧蘭; [PHILIPS] Darlo.Perez; David.Chao;
[PHILIPS] Dian van Wel; harlem.yang; [PHILIPS] Leland Key; Michael.Chuang;
[PHILIPS] Nadine.van.der.Schans@philips.com; nelson.chang(張總-QSS); Rex.lee 李東憲;
[PHILIPS] Ruby HK. Shieh; Shu-ming.Tzeng; [PHILIPS] Thomas van der Zijden;
voka.chen; [PHILIPS] Volvo Lee
Subject: Re: FW: ***Important Announcement - Change effective Jan 31st***

Anita, I suggest someone to do a price comparison before we are to go to Dell
and discuss the issue.

CONFIDENTIAL

Tzeng
MING
Exhibit 2125
Date: 3/9/17 Name: _____
Lana L. Lopez, RMF, CRR, CCP, CSR No. 9667

ODDCIV-000268482

Regards,

Billy Reynolds
Global Account Manager
Philips Optical Storage
Office: 512-241-4561
Cell: 512-848-1254

Anita.Yin@qsitw.com

01/18/05 07:43 PM

To: <Shu-ming.Tzeng@qsitw.com>
<Cherry.Chen@qsitw.com>
Dian van Wel/EHV/COMP/PHILIPS@PHILIPS
Ruby HK Shieh/TPE/COMP/PHILIPS@PHILIPS
cc: Billy Reynolds/FHI/COMP/PHILIPS@PHILIPS
Leland Key/FHI/COMP/PHILIPS@PHILIPS
Thomas van der Zijden/EHV/COMP/PHILIPS@PHILIPS
<David.Chao@qsitw.com>
<voka.chen@qsitw.com>
<rex.Lee@qsitw.com>
<nelson.chang@qsicn.com>
<Anita.Chang@qsitw.com>
<Michael.Chuang@qsitw.com>
<harlem.yang@qsitw.com>
Volvo Lee/TPE/COMP/PHILIPS@PHILIPS
Darlo Perez/SVL/COMP/PHILIPS@PHILIPS
Nadine van der Schans/SVL/SC/PHILIPS@PHILIPS
Subject: FW: ***Important Announcement - Change effective Jan
31st***

Classification:

Shu-Ming/ Dian/ Ruby,

This is not acceptable. We are forced to accept the new contract without to see anything yet so far. Due to bad experience and terrible handling from IEC, we need to raise this to Dell WW for their attention. Without to see IEC any improvement, we should not agree with anything. Please study how much price increase for hub operation.

Thanks,

Anita Yin
(O)886-3-352-5555 ext. 1120
(C)886-936-126-357
(F)886-3-3218180

-----Original Message-----

From: Sandra Kelleher [mailto:Sandra.Kelleher@ie.flextronics.com]
Sent: Tuesday, January 18, 2005 9:32 PM
Subject: ***Important Announcement - Change effective Jan 31st***
Importance: High

Dear Customer,

IEC/Flextronics are very pleased to announce that we have just signed a new two year contract with Dell EMF to provide Dell World Wide Suppliers (Dell WWS) with VMI Logistics and Merge Services.

This terms and conditions in this new two year contract are very different to the terms and conditions as agreed previously and will provide you, our valued customer, with many advantages over the previous Service Level Agreements. The purpose of this communication is to advise you of the new terms and conditions which will become effective from Monday, January 31st 2005.

The appropriate worded amendments or new contracts as the case may be will be issued in due course, the main changes are outlined below

PRICE AND PAYMENT TERMS

The new pricing for standard services will be:

Pallet/Dub In: EUR5.58

Pallet/Dub storage per week or part thereof EUR4.89

Carton Out: EUR1.96

Also attached is the full schedule of applicable rates to the hub. Depending on the scope of services required, you will find that only some of the rates will be applicable to you.

Our standard Payment terms will be thirty (30) days EOAP from the date of IEC/Flextronics Invoices in respect of services rendered.

EOAP is defined as end of accounting period, where the period is no longer than a fiscal month.

INHOUSE DAMAGED PRODUCT. The main changes are as follows:

Under the new terms and conditions, for any product which is damaged within the IEC/Flextronics facility by our staff or processes, we will provide the following services at no additional cost:

- Handling of product in and out of screening area
- Provision of equipment / benches etc. to enable screening
- Cost of boxes if product only requires reboxing
- RTV costs if product needs to return to supplier to be screened and the return transportation costs to the Hub if product is retrievable, assuming

IEC/Flextronics is the nominated carrier.

- Out of bond and return to bond costs if product needs to move to an external facility to be screened.
- Scrappage costs if product needs to be scrapped
- Any damaged product that fails a screening process and is considered irretrievable and cannot be placed back to good / available stock will be treated as lost product, provided it is returned to IEC/Flextronics to be scrapped.

INHOUSE LOST PRODUCT. The Main changes are as follows:

The total allowable level of inventory losses on a quarterly basis (quarterly tolerance allowance) will become 0.03% of the total inventory throughput value.

In the case of stocktaking differences any minus stocks of part number values from a specific DWWS can be offset against plus stock values from the same DWWS.

IEC/Flextronics shall assume this tolerance allowance over the quarterly period. IEC/Flextronics computerized warehouse management system (Atlas) shall be the system of record for inventory management purposes. This will be submitted to all DWWS by the 14th of the month following the previous Dell quarter. DWWS must then submit their claim to Flextronics by the end of the same month, should the damage/loss exceed the tolerance.

For any parts which are the subject of an unexplained loss greater than the 0.03% tolerance, after January 31st 2005, IEC/Flextronics will be liable to Dell WWS for the lesser of full replacement value (i.e. the vendor's invoice to Dell) or \$35.00 per kilo of actual product weight, excluding packaging, for any cumulative net inventory losses over a quarterly period.

Please note that Dell WWS shall only be entitled to submit a claim:

- (i) where the damage or loss exceeds the quarterly tolerance allowance in a given quarter, and
- (ii) where no IEC/Flextronics invoice to the specific DWWS remains unpaid for greater than thirty days EOAP from the invoice date prior to the claim payment date.

Therefore to avail of the new improved liability offer, we request that you bring your account fully up to date prior to January 31st, 2005.

Contracts

We will update the terms and conditions and issue the appropriate amendments to our contract over the next month.

If you have any questions with respect to this communication, please do not hesitate to contact your Customer Service Representative within IEC/Flextronics.

Regards,
Lauretta Keyes

<<Pricing Schedule PP.doc>>

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ODDCIV00268482

Metadata

Box#	HOW012	ORIGINAL
Cc	anita.chang@qsitw.com;Cherry.Chen@qsitw.com;Darlo PerezPHILIPS@PHILIPS;David.Chao@qsitw.com;Dian van WelPHILIPS@PHILIPS;harlem.yang@qsitw.com;Leland KeyPHILIPS@PHILIPS;Michael.Chuang@qsitw.com;Nadine van der SchansPHILIPS@PHILIPS;nelson.chang@qsicn.com;rex.Lee@qsitw.com;Ruby HK ShiehPHILIPS@PHILIPS;Shu-ming.Tzeng@qsitw.com;Thomas van der ZijdenPHILIPS@PHILIPS;voka.chen@qsitw.com;Volvo LeePHILIPS@PHILIPS	ORIGINAL
Company	Howrey LLP	ORIGINAL
Custodian	Perez, Darlo	ORIGINAL
Datercvd	01/19/2005	ORIGINAL
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FolderID	All, Mail Threads	ORIGINAL
From	Anita.Yin@qsitw.com	ORIGINAL
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Lang	English	ORIGINAL
Pgcount	5	ORIGINAL
Prprties	E-mail	ORIGINAL
Subject	RE: FW: ***Important Announcement - Change effective Jan 31st***	ORIGINAL
Timesent	02:42 AM	ORIGINAL
To	Billy ReynoldsPHILIPS@PHILIPS	ORIGINAL

EXHIBIT 36

From: JC Lim
Sent: Tue, 30 Oct 2007 23:02:57 GMT
To: Fannie Lee
CC: Charlie Tseng; Darlo.Perez@pbds.com; frederick.wong@pldsnet.com; Jerry Hsieh
Subject: Re: Fw: Jan & Q1 Pricesheet Update - Slim ODD & FDD

Thanks!!

Regards,

JC Lim
Global Key Account Manager, BU ODD - OEM Division, PLDS USA
1817 Braker Lane, Suite #100
Austin, TX 78758
Tel: (512)-691-3303 / Fax: (512)-990-1276 / Mobile: (512)-748-0042
E-mail: jc.lim@pldsnet.com

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Fannie Lee/TPE/PLDS
2007/10/30 上午 07:19

To
JC Lim/FRE/PLDS@PLDS
cc
Charlie Tseng/TPE/PLDS@PLDS, Darlo.Perez@pbds.com, frederick.wong@pldsnet.com,
Jerry Hsieh/TPE/PLDS@PLDS
Subject
Re: Fw: Jan & Q1 Pricesheet Update - Slim ODD & FDD

CONFIDENTIAL

Tseng Exhibit 2130
Date: 3/9/17 Name: _____
Lana L. Loper, RMR, CRR, CCP, CSR No. 9667

ODDCIV-000089342

Hi JC,

Here is Dec pricing info I get from QSI sales for reference. The ranking is the same as what we guess but it's a little bit different with our pricing info. Suppose their price is more realistic, then TSST will be lowest for Jan pricing and our competitors will be HLDS & Optiarc for the 2nd position.

For Optiarc Jan pricing, the sales advised that they are not many margin to reduce the price and not possible to meet Dell request for the reduction target \$1. She also did not hear to propose the 2nd run pricing proposal from Optiarc site. But she guesses Alex may request to have 2nd run once all suppliers' price proposals are not meet his target.

Once get the confirmation about key componenets cost, we will check our price proposal and revert to Alex before Thursday. Thank you.

Ranking Dec '07 (QSI record) Dec '07 (PLDS record)

TSST #1 \$28 \$28.28

PLDS #2 \$28.30 \$28.31

HLDS #3 \$28.31 \$28.35

Optiari/QSI #4 ~\$28.40 \$28.55

Panasonic \$5 below \$28.50

Note: My E-Mail add is changed to Fannie.Lee@pldsnet.com

Best regards,

Fannie, Lee

ODD-OEM Division

Philips & Lite-On Digital Solutions Corporation

Tel: 886-2-8798-2798 Ext.8540

Fax: 886-2-5581-0868

E-mail: Fannie.Lee@pldsnet.com

JC Lim/FRE/PLDS

2007/10/30 上午 06:40

To

Fannie Lee/TPE/PLDS@PLDS

cc

Charlie Tseng/TPE/PLDS@PLDS, Darlo.Perez@pbds.com, frederick.wong@pldsnet.com,

Jerry Hsieh/TPE/PLDS@PLDS

Subject

Re: Fw: Jan & Q1 Pricesheet Update - Slim ODD & FDD

Hi Fannie,

Talkek to both Sony & Optiarc and her are the feedback:

1. Sony Optiarc Jan'07 pricing

- Kris William is no longer responsible for Sony Optiarc account in Austin and he has been transfer to handle the Sony Optiarc RMA Reakted issue and Green initiative projects.
- The new PIC for Sony Optiarc is Vincent Chang who is from Sony Singapore and I have no idea what is the pricing they quoted.

2. HLDS

- HLDS reluctant to release the final pricing info to me and Bill has stated that he will be out of Dell Austin RMSD by end of this month and he is not involving on the slim pricing info. All RMSD Procurement related function had been complete(i.e 99%) to Dell Singapore team.
- Not able to obtain HLDS Jan'08 pricing due to Dell is still not yet finalize and closing the offering. He is not willing to share until Dell close the offering for Jan'08.

3. Attach is Dell RMSD Sep'07-Dec'07 pricing:

Key message:

1. Pricing Delta for PLDS vs. RMSD Suppliers(4 months pricing data)

TSST HLDS Optiarc

Price erotion -0.54 -0.52 -0.48 ==> Average pricing erotion simulation for Sep'07-Dec'07(4 months data collection)

Jan'08 27.46 27.48 27.52 ==> Assuming Alex is giving the true fact that Jan'08 pricing is below \$28 (prediction)

Based on your statement," According to Alex, most suppliers' prices are aggressive below \$28 for their 1st run and will have 2nd run to revert to him before this Wed for a better TAM award.",

Dell RMSD Pricing erotion & prediction is between 0.48 ~0.52,

hence, Dell RMSD supplier Jan'08 pricing prediction range is 27.46~27.52.(My opinion only basd on 4 months pricing erotion).

Regards,

JC Lim

Global Key Account Manager, BU ODD - OEM Division, PLDS USA

1817 Braker Lane, Suite #100

Austin, TX 78758

Tel: (512)-691-3303 / Fax: (512)-990-1276 / Mobile: (512)-748-0042

E-mail: jc.lim@pldsnet.com

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Fannie Lee/TPE/PLDS

2007/10/29 上午 06:10

To

Charlie Tseng/TPE/PLDS@PLDS

cc

Darlo.Perez@pbds.com, frederick.wong@pldsnet.com, Jerry Hsieh/TPE/PLDS@PLDS, JC

Lim/FRE/PLDS@PLDS

Subject

Re: Fw: Jan & Q1 Pricesheet Update - Slim ODD & FDD

Dear Charlie,

After talking with Alex, he agrees PLDS to submit the price proposal for Jan '08 & Q1 '08 no later than this Thursday (10/25). Thus I do not provide the price to him today.

Below info is we get from Alex for reference.

1. All suppliers already submitted the price proposal for Jan '08 and Q1'08 (Feb~Apr) to Dell except PLDS.
2. The target reduction for Jan '08 is us\$1 from Dec. pricing. (The pricing range for Dec '07 is \$28.3~28.5, that means the target pricing range for Jan '08 is to request around \$27.3~\$27.5)
3. According to Alex, most suppliers' prices are aggressive below \$28 for their

1st run and will have 2nd run to revert to him before this Wed for a better TAM award.

JC, Pls kindly help to check what the pricing from other suppliers offer to Dell. Thank you.

Note: My E-Mail add is changed to Fannie.Lee@pldsnet.com

Best regards,
Fannie, Lee
ODD-OEM Division
Philips & Lite-On Digital Solutions Corporation
Tel: 886-2-8798-2798 Ext.8540
Fax: 886-2-5581-0868
E-mail: Fannie.Lee@pldsnet.com

JC.Lim@liteonit.com
2007/10/22 下午 10:43

To
Fannie.Lee@pldsnet.com
cc
frederick.wong@pldsnet.com, Jerry.Hsieh@pldsnet.com, Darlo.Perez@pbds.com,
charlie.tseng@pldsnet.com
Subject
Fw: Jan & Q1 Pricesheet Update - Slim ODD & FDD

FYI.

----- Forwarded by JC Lim/MON/LITEONIT on 2007/10/22 上午 09:42 -----

<Alex_Wu@dell.com>

2007/10/22 上午 01:09

To:

cc: <Bill_Bundlie@dell.com>, <Ricky_Sim@dell.com>

Subject: Jan & Q1 Pricesheet Update - Slim ODD & FDD

Hi All,

Please update your Jan & Q1 price file and send me no later than next Monday

10/29. My Jan negotiation strategy will be based upon your price proposals, so please maintain it competitive so that we don't have to run for IN again.

Thanks.

Best Regards

Alex WU | RMSD GCM | DELL WWP Singapore | Office: +65 6823 6154 | Mobile: +65 9145 0160 | Fax: +65 6829 1154 | E-mail: alex_wu@dell.com

ODDCIV00089342**Metadata**

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Cc	Charlie Tseng;Darlo.Perez@pbds.com;Frederick.Wong@pldsnet.com;Jerry Hsieh	ORIGINAL
Company	Howrey LLP	ORIGINAL
Custodian	Lim, J.C	ORIGINAL
Docdate	10/30/2007	ORIGINAL
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Prprties	E-mail	ORIGINAL
Subject	Re: Fw: Jan & Q1 Pricesheet Update - Slim ODD & FDD	ORIGINAL
Timesent	11:02 PM	ORIGINAL
To	Fannie Lee	ORIGINAL

Placeholder

Document produced in native format

ODDCIV00089348

Metadata

Applicat	Microsoft Excel	ORIGINAL
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Box#	HOW012	ORIGINAL
Cc	Charlie Tseng;Darlo.Perez@pbds.com;Frederick.Wong@pldsnet.com;Jerry Hsieh	ORIGINAL
Company	Howrey LLP	ORIGINAL
Custdian	Lim, J.C	ORIGINAL
Datecrtd	06/22/2007	ORIGINAL
Datesvd	10/29/2007	ORIGINAL
Docdate	10/30/2007	ORIGINAL
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Doclink	DOCLINK\VOL001\0001\0028\ODDCIV-000089348.XLS	ORIGINAL
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Famlyrng	ODDCIV-000089342 - ODDCIV-000089348	ORIGINAL
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Hash	9715defdfe9cc8f85392fd498470faf1	ORIGINAL
Lang	English_And_Unknown	ORIGINAL
Parentid	ODDCIV-000089342	ORIGINAL
Pgcount	1	ORIGINAL
Prprties	Attachment	ORIGINAL
To	Fannie Lee	ORIGINAL

Dell P/N	Description	PLDS			TSST			HIDS			Opdate			Pioneer			
		Sep07	Cost Adder	Ranking	TAM	Sep07	Cost Adder	Ranking	TAM	Sep07	Cost Adder	Ranking	TAM	Sep07	Cost Adder	Ranking	TAM
YY335	Bare	30.89				30.45				30.44				30.48			
JW884	FI D-Mod	34.45	3.56			33.55	3.10	#1		33.11	2.67	#1		33.73	3.25	#3	
Un242	NF D-mod	34.45	3.56			33.55	3.10	#1		33.11	2.67	#2		33.73	3.25	#2	
UN166	Cyber Sata Ass	36.59	5.70			35.90	5.45	#1		36.04	5.60	#2		36.00	5.52	#2	
GN626	STB Assy	31.39	0.50			30.79	0.34	#1		30.44	0.00	#1		30.48	0.00	#2	
MR467	CGSY	31.89	1.00			31.55	1.10	#1		31.66	1.22	#3		31.65	1.17	#2	
WR091	LanaI	31.69	0.80			32.19	1.74	#3		31.58	1.14	#1		32.24	1.76	#4	
GX313	Siberia	32.69	1.80			32.39	1.94	#3		32.35	1.91	#3		32.24	1.76	#2	
Bali		31.89	1.00			30.79	0.34	#1									

Dell P/N	Description	PLDS			TSST			HLDS			Opdate			Pioneer			
		Oct07	Cost Adder	Ranking	TAM	Oct07	Cost Adder	Ranking	TAM	Oct07	Cost Adder	Ranking	TAM	Oct07	Cost Adder	Ranking	TAM
YY335	Bare	29.95				29.80				30.40				30.00			
JW884	FI-D-Mod	33.51	3.56	#4	10%	32.90	3.10	#1		33.50	3.10	#3		33.25	3.25	#2	
Un242	NF D-mod	33.51	3.56	#4	10%	32.90	3.10	#1		33.50	3.10	#3		33.25	3.25	#2	
UN166	Cyber Sata Ass	35.65	5.70	#4	10%	35.25	5.45	#1		36.00	5.60	#4		35.50	5.50	#2	
GN626	STB Assy	30.30	0.35	#2	25%	30.14	0.34	#1		30.80	0.40	#4		30.50	0.50	#3	
MR467	CGSY	30.95	1.00	#2	30%	30.90	1.10	#1		31.58	1.18	#4		31.17	1.17	#3	
WR091	Lanai	30.75	0.80	#1	40%	31.54	1.74	#3		31.54	1.14	#2		31.76	1.76	#4	
GX313	Siberia	31.75	1.80	#1	40%	31.74	1.94	#3		32.31	1.91	#5		31.76	1.76	#2	

Dell P/N	Description	PLDS			TSST			HIDS			Opdate			Pioneer			
		Nov07	Cost Adder	Ranking	TAM	Nov07	Cost Adder	Ranking	TAM	Nov07	Cost Adder	Ranking	TAM	Nov07	Cost Adder	Ranking	TAM
YY335	Bare	28.86		#5		28.78		#1		28.82		#2		28.85		#4	
JW884	FI D-Mod	32.42	3.56	#4		31.88	3.10	#1		31.92	3.10	#2		32.10	3.25	#3	
Un242	NF Demod	32.42	3.56	#4		31.88	3.10	#1		31.92	3.10	#2		32.10	3.25	#3	
UN166	Cyber Sata Ass	34.56	5.70			34.23	5.45			34.42	5.60			34.35	5.50		
GN626	STB Assy	29.21	0.35			29.12	0.34			29.22	0.40			29.35	0.50		
MR467	CGSY	29.86	1.00			29.88	1.10			30.00	1.18			30.02	1.17		
WR091	LanaI	29.66	0.80			30.52	1.74			29.96	1.14			30.61	1.76		
GX313	Siberia	30.66	1.80			30.72	1.94			30.73	1.91			30.61	1.76		
NM087	spears	30.61	1.75	10%						30.67	1.85						

Dell P/N	Description	PLDS			TSST			HLDS			Optarc			Pioneer			
		Dec07	Cost Adder	Ranking	TAM	Dec07	Cost Adder	Ranking	TAM	Dec07	Cost Adder	Ranking	TAM	Dec07	Cost Adder	Ranking	TAM
YY335	Bare	28.31				28.28		#1		28.35		#3		28.55	not sure		28.74
JW884	FI D-Mod	31.87	3.56	#4		31.38	3.10	#1		31.45	3.10	#2		31.80	3.25	#2	
Un242	NF D-mod	31.87	3.56	#4		31.38	3.10	#1		31.45	3.10	#2		31.80	3.25	#2	
UN166	Cyber Sata Ass	34.01	5.70			33.73	5.45			33.95	5.60			34.05	5.50		
GM626	STB Assy	28.66	0.35			28.62	0.34			28.75	0.40			29.05	0.50		
MR467	CGSY	29.31	1.00			29.38	1.10			29.53	1.18			29.72	1.17		
WR091	LanaI	29.11	0.80			30.02	1.74			29.49	1.14			30.31	1.76		
GX313	Siberia	30.11	1.80			30.22	1.94			30.26	1.91			30.31	1.76		
NM087	Spears	30.06	1.75	10%						30.20	1.85						
		29.71	1.40														
		29.76	1.45														

EXHIBIT 37

From: Lindsay Lu
Sent: Thu, 10 Apr 2008 11:18:44 GMT
To: JC Lim
CC: Charlie Tseng; Darlo Perez; Freddie Hsieh
Subject: Re: HP mPC Slim SATA DVDRW eRFQ Round#2 Result

Hi JC,

Correct the following informtion. QSI is ranking#2. So, Pioneer is #3.

Best Regards,
Lindsay Lu(#8848)
Philips & Lite-ON Digital Solutions Corp.
TEL : 886-2-8798 2798
FAX : 886-2-5581 0868
E-mail : Lindsay.Lu@PLDSnet.com

Lindsay Lu/TPE/PLDS
2008/04/10 上午 09:50

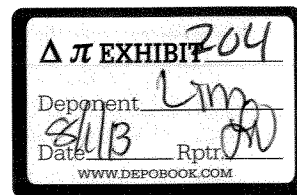
To
JC Lim/FRE/PLDS
cc
Charlie Tseng/TPE/PLDS@PLDS, Darlo Perez/FRE/PLDS@PLDS, Freddie
Hsieh/TPE/PLDS@PLDS
Subject
Re: HP mPC Slim SATA DVDRW eRFQ Round#2 Result

Dear JC,

Per the conversation with QSI yesterday, they put \$26.30 for SATA drive. Their intention is not to be the #5. Hence, QSI will no move their price in round 2.

The ranking in round 1 and round 2 should be :

#1 TSST
#2 Pioneer
#3 QSI



#4 PLDS

#5 HLDS

Best Regards,
Lindsay Lu(#8848)
Philips & Lite-ON Digital Solutions Corp.
TEL : 886-2-8798 2798
FAX : 886-2-5581 0868
E-mail : Lindsay.Lu@PLDSnet.com

JC Lim/FRE/PLDS
2008/04/10 上午 07:53

To
Freddie Hsieh/TPE/PLDS@PLDS, Lindsay Lu/TPE/PLDS@PLDS
cc
Charlie Tseng/TPE/PLDS@PLDS, Darlo Perez/FRE/PLDS@PLDS
Subject
HP mPC Slim SATA DVDRW eRFQ Round#2 Result

Hi Freddie/Lindsay,

Here are the result for Round#2 I have collected:

Note: Not able to get the Round#2 Rank#1&2 pricing cause Andrew does not share since we are not moving our pricing. But I believe the pricing will still within \$1-\$1.70 range.

Talked to HLDS and he stated that they have received Slim PATA DVDRW TAM ~25%(i.e 1.02M) and they will not be so aggressive to compete #1 or #2 but will try to get #3 or #4 position in Slim SATA DVDRW. The main reason is that they already foresee HLDS qualify into Event#3 for OPP eRFQ. In addition, they are only 5% different from their expectation for Slim PATA DVDRW. I believe HLDS will try to secure #4 position at Round#3 for Slim SATA DVDRW due to the volume for slim SATA DVDRW(i.e 1.5M) is not so high as compare to PATA.(i.e 4M).

Regards,

JC Lim

Global Key Account Manager, BU ODD - OEM Division, PLDS USA

8203 Willow Place South, Suite#650

Houston, TX 77070

Tel: (281)-970-0654 / Fax: (281)-970-0659 / Mobile: (281)-660-8363

E-mail: jc.lim@pldsnet.com

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----- Forwarded by JC Lim/FRE/PLDS on 04/09/2008 06:25 PM -----

JC Lim/FRE/PLDS

04/08/2008 11:47 PM

To

Freddie Hsieh/TPE/PLDS, Lindsay Lu/TPE/PLDS

cc

Charlie Tseng/TPE/PLDS@PLDS, Darlo Perez/FRE/PLDS@PLDS, Allen

Liao/HCP/LITEONIT@LITEONIT

Subject

HP mPC Slim SATA DVDRW eRFQ Round#1 Result

Hi all,

Attach is the result for eRFQ round#1 which I collected for your reference:

Slim SATA DVDRW :

Note: From the round#1 result, the Slim SATA DVDRW price trend is almost the same as Slim PATA DVDRW

Slim PATA DVDRW :(Final result)

Note: Due to HLDS has quality cost factor over Optiarc, they are #2 even they are at the same price with Optiarc.

Regards,

JC Lim

Global Key Account Manager, BU ODD - OEM Division, PLDS USA

8203 Willow Place South, Suite#650

Houston, TX 77070

Tel: (281)-970-0654 / Fax: (281)-970-0659 / Mobile: (281)-660-8363

E-mail: jc.lim@pldsnet.com

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Metadata

Box#	HOW012	ORIGINAL
Cc	Charlie Tseng;Darlo Perez;Freddie Hsieh	ORIGINAL
Company	Howrey LLP	ORIGINAL
Custodian	Lim, J.C	ORIGINAL
Datercvd	04/10/2008	ORIGINAL
	2008/04/10	SEMANTIC
Docdate	04/10/2008	ORIGINAL
	2008/04/10 12:00 am	SEMANTIC
Docid	ODDCIV-000105746	ORIGINAL
DocType	Message	ORIGINAL
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FolderID	All, Custom Expiration\By Date, ICALInfoDocs, Inbox, Mail Threads	ORIGINAL
From	Lindsay Lu	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	ff2738e51ae1e3d9b2e0867dd7747534	ORIGINAL
Lang	English	ORIGINAL
Pgcount	4	ORIGINAL
Prprties	E-mail	ORIGINAL
Subject	Re: HP mPC Slim SATA DVDRW eRFQ Round#2 Result	ORIGINAL
Timesent	11:18 AM	ORIGINAL
	11:18 am	SEMANTIC
To	JC Lim	ORIGINAL

EXHIBIT 38

From: JC Lim
Sent: Wed, 02 Jul 2008 02:18:04 GMT
To: Lindsay Lu
CC: Charlie Tseng; Crystal Huang; Darlo Perez; Freddie Hsieh
Subject: Re: HP mPC Slim DVDRW Q308 Pricing Info Update - 7/1

Hi Lindsay,

I am trying to contact TSST but he is on business trip and will only be back by tomorrow. I will double check with TSST tomorrow. In addition, I also manage to talk to QSI and they did not make any price movement. Their price is still the same.

Regards,

JC Lim
Global Key Account Manager, BU ODD - OEM Division, PLDS USA
8203 Willow Place South, Suite#555
Houston, TX 77070
Tel: (281)-970-0654 / Fax: (281)-970-0659 / Mobile: (281)-660-8363
E-mail: jc.lim@pldsnet.com

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Lindsay Lu/TPE/PLDS
07/01/2008 09:09 PM

To
JC Lim/FRE/PLDS@PLDS
cc
Charlie Tseng/TPE/PLDS@PLDS, Crystal Huang/TPE/PLDS@PLDS, Darlo Perez/FRE/PLDS@PLDS, Freddie Hsieh/TPE/PLDS@PLDS
Subject
Re: HP mPC Slim DVDRW Q308 Pricing Info Update - 7/1



JC,

Does HLDS make an agreement with TSST? If HLDS go for #1, what will TSST react? I am hoping mainstream price will not impact OPP price.....

Best Regards,
Lindsay Lu(#8848)
Philips & Lite-ON Digital Solutions Corp.
TEL : 886-2-8798 2798
FAX : 886-2-5581 0868
E-mail : Lindsay.Lu@PLDSnet.com

JC Lim/FRE/PLDS
2008/07/02 上午 03:19

To
Freddie Hsieh/TPE/PLDS@PLDS, Lindsay Lu/TPE/PLDS@PLDS
cc
Darlo Perez/FRE/PLDS@PLDS, Charlie Tseng/TPE/PLDS@PLDS, Crystal
Huang/TPE/PLDS@PLDS
Subject
HP mPC Slim DVDRW Q308 Pricing Info Update - 7/1

Hi Freddie/Lindsay,

Talked to HLDS today and he confirmed that they will only focus on Mainstream product. The message they deliver to HP(i.e Cara/Andrew) is that they will match whatever the pricing for Rank#1 at the end of the eRFQ pricing negotiation.

Note: HLDS last price quotation to HP is Mainstream: \$26, OPP: \$26. HLDS will match to #1 Mainstream pricing but not OPP.

Regards,

JC Lim

Global Key Account Manager, BU ODD - OEM Division, PLDS USA

8203 Willow Place South, Suite#555

Houston, TX 77070

Tel: (281)-970-0654 / Fax: (281)-970-0659 / Mobile: (281)-660-8363

E-mail: jc.lim@pldsnet.com

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Metadata

Box#	HOW012	ORIGINAL
Cc	Charlie Tseng;Crystal Huang;Darlo Perez;Freddie Hsieh	ORIGINAL
Chronologydate	2008/07/02	USER
Company	Howrey LLP	ORIGINAL
Custdian	Hsieh, Freddie	ORIGINAL
Datercvd	07/02/2008	ORIGINAL
	2008/07/02	SEMANTIC
Docdate	07/02/2008	ORIGINAL
	2008/07/02 12:00 am	SEMANTIC
Docid	ODDCIV-003389257	ORIGINAL
DocType	Message	ORIGINAL
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FolderID	All, Custom Expiration\By Date, ICALInfoDocs, Inbox	ORIGINAL
From	JC Lim	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	c485cf42b7050a937ecf7a3fc5ee009b	ORIGINAL
Lang	English	ORIGINAL
Pgcount	3	ORIGINAL
Prprties	E-mail	ORIGINAL
Subject	Re: HP mPC Slim DVDRW Q308 Pricing Info Update - 7/1	ORIGINAL
Timesent	02:18 AM	ORIGINAL
	2:18 am	SEMANTIC
To	Lindsay Lu	ORIGINAL

EXHIBIT 39

[Page 1]

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

---oOo---

IN RE: OPTICAL DISK DRIVE
PRODUCTS ANTITRUST LITIGATION

_____ /

MDL No. 3:10-md-2143 RS

This Document Relates to:
ALL INDIRECT PURCHASER ACTIONS

_____ /

** HIGHLY CONFIDENTIAL PURSUANT TO PROTECTIVE ORDER **

Videotaped Deposition of
DAE HWA (BRUCE) JEONG
Volume 1, Page 1 through 168
Thursday, April 18, 2013

Reported by:
KIMBERLEE SCHROEDER, CSR, RPR, CCRR
License No. 11414
Job No.: 102280

1 A. Yes.

2 Q. Did you have any -- did you meet with anyone
3 that was from QSI and discuss the ODD business including
4 the Acer account?

5 A. Yes.

6 Q. Who, sir?

7 A. E-v-o-n.

8 Q. Is Evon a female?

9 A. Yes.

10 Q. Do you know a name beyond simply Evon?

11 A. I don't know her last -- Chinese last name, no.

12 Q. The only name you know for her is E-v-o-n?

13 A. Are you asking that's the only name I know?

14 Q. For her. I'll ask you about other people.

15 For her.

16 A. Yes, yes.

17 Q. Okay. With respect to other people, are there
18 other people that you had met with to discuss ODD
19 business from QSI?

20 A. Yes. There are other people, but I don't
21 remember their names. Evon's boss.

22 Q. Was Evon's boss a male or female?

23 A. Female.

24 Q. Sorry. Were you done?

25 A. It was female.

[Page 114]

1 CHECK INTERPRETER PARK: Just one quick
2 interjection as to "other people." Actually, in Korean,
3 singular versus plural is not clearly indicated, so I
4 don't know whether he was talking about a person or
5 people.

6 MR. FRIEDMAN: Okay. I'll ask. Thank you.

7 Q. Now, with respect to the boss of Evon, who was
8 a female, do you recall if this female's name was Sally?

9 A. That sounds right.

10 Q. In addition to Sally -- let me ask.

11 Does Sally Huang, H-u-a-n-g, sound familiar? I
12 shouldn't say "sound familiar."

13 A. Sally Huang, I'm not sure. Was it Huang or
14 Hang? Either it's H-a-n-g or H-u-a-n-g.

15 Q. Fair enough. Other than Sally and Evon, was
16 there anyone else that you met with from QSI and
17 discussed ODD business?

18 A. I believe there was one other individual, but I
19 don't know that person's name.

20 Q. Was it a male or female?

21 A. Female.

22 Q. When you met with any one of these women, did
23 you meet with them in restaurants?

24 A. Yes. That's how I recall.

25 Q. With respect to Pioneer, did you meet with

REPORTER'S CERTIFICATE


I, KIMBERLEE SCHROEDER, CSR 11414, duly authorized to administer oaths pursuant to Section 30(c) of the Federal Rules of Civil Procedure, hereby certify that the witness in the foregoing deposition was by me duly sworn to testify the truth, the whole truth and nothing but the truth in the within-entitled cause; that said deposition was taken at the time and place therein stated; that the testimony of the said witness was reported by me and thereafter transcribed by me and that the witness was given an opportunity to read and correct said deposition and to subscribe the same.

I further certify that I am not of counsel or attorney for either or any of the parties to said cause of action, nor in any way interested in the outcome of the cause named in said cause of action.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated this 25th day of April, 2013.

22


KIMBERLEE SCHROEDER, CSR, RPR, CCRR
License No. 11414

23

24

25

EXHIBIT 40

From: haw.chen 陳尚昊 <MAILER-DAEMON>

Subject: RE: Slim RMSD IN Announcement - Feb & Mar FY09 Slim Combo & DVDRW PATA, Dec 13, 2007

To: haw.chen 陳尚昊; voka.chen 陳堅祥

Cc: Shu-ming.Tzeng 曾淑明; Anita.Yin 陰家恩; Barney.Wen 溫明堂; Vivid.wen 溫銘真

Date: Fri, 14 Dec 2007 01:27:16 +0000

Dear Boss,

Below shows Feb and Mar bid results. The situation is even worse than Nov/Dec bid. From the results, we have some action items to maintain profits.

<P&L Analysis>

1. Feb RW \$26.91: Based on Nov cost (COG+shipping), \$27.2 is profitable. Feb pricing is around \$0.4 lower than our cost.
2. Mar RW \$26.04: is around \$1.2 lower than our cost.
3. Feb combo \$22.18: just around our cost (COG+shipping).
4. Mar combo \$22.60: around \$0.58 lower than our cost.

<competitors analysis>

RW

1. Pioneer is out.
2. TSST always get no.1, HLDS never give up getting no.2, PLDS try best to get no.3 (PLDS Jerry told me during the IN).

combo.

1. TSST is always no.1. I am surprised Teac is reviving and very aggressive to get no.2
2. HLDS and we are trying hard to follow not to get the last position.

Dear Barney, Vivid, Anita, Shu-ming,

Our actions,

<Actions>

1. How to make further \$0.4, \$1.2, cost reduction for RW? and \$0.58 for combo?
2. need to finalize strategy in preparation for next RFQ?

Thanks,

Haw

<Slim DVDRW>

Feb 08

1. TSST \$26.80
2. HLDS \$26.86
3. PLDS \$26.89



4. Optiarc/QSI \$26.91

Mar 08

1. TSST \$25.99

2. HLDS \$26.01

3. PLDS \$26.03

4. Optiarc/QSI \$26.04

<Slim Combo>

Feb 08

1. TSST \$22.14

2. TEAC \$22.15

3. Optiarc/QSI \$22.18

4. HLDS \$22.21

Mar 08

1. TSST \$21.58

2. Optiarc/QSI \$21.60

3. TEAC \$21.61

4. HLDS \$21.62

——Original Message——

From: haw.chen 陳尚昊

Sent: Wednesday, December 12, 2007 7:56 PM

To: voka.chen 陳堅祥

Subject: RE: Slim RMSD IN Announcement - Feb & Mar FY09 Slim Combo & DVDRW PATA, Dec 13, 2007

Dear Voka,

We are going to have an IN tomorrow for Feb and Mar. To be honest, we don't have buffer to move forward.

RW:

1. cost 23.61 at MTK chip 4.15 and OPU 9.9.
2. Jan pricing is: 27.68 at 3rd position. If cost can be down by 0.5, pricing above 26.8 can still get profit.
3. My expectation is to squeeze 0.5 from chip, OPU and manufacture.
4. My target is still number 3 or number 4.

Combo:

1. cost 19.51 at MTK chip 3.16 and OPU 820Yen.
2. Jan pricing is 22.65 at 2nd position. If cost can be down by 0.5, pricing above 22 can still get profit.
3. I hope to squeeze 0.5 from chip, OPU and manufacture.
4. My target is till number 2.

Please check if there is any issues.

Thanks,
Haw

—Original Message—

From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]

Sent: Wednesday, December 12, 2007 5:12 PM

To: Sato, Tomio; Mikami, Junsuke; Amino, Masafumi (Optiarc); Williams, Kris; Shu-ming.Tzeng 曾淑明; haw.chen 陳尚昊

Subject: FW: Slim RMSD IN Announcement - Feb & Mar FY09 Slim Combo & DVDRW PATA, Dec 13, 2007

Importance: High

Team,

Please find below the information for tomorrow's IN:

<Access to Ariba Sourcing>

[https://esourcing.dell.com/Sourcing/jsp/en/trader/market/EventDetail.jsp?](https://esourcing.dell.com/Sourcing/jsp/en/trader/market/EventDetail.jsp?passwordadapter=SourcingSupplierUser)

passwordadapter=SourcingSupplierUser

<[https://esourcing.dell.com/Sourcing/jsp/en/trader/market/EventDetail.jsp?](https://esourcing.dell.com/Sourcing/jsp/en/trader/market/EventDetail.jsp?passwordadapter=SourcingSupplierUser&marketId=169006)

passwordadapter=SourcingSupplierUser&marketId=169006> &marketId=169006

Username: vincent.chng@ap.sony.com

Password: Chngchv999

<IN Schedule>

12/13 (Thursday – Singapore Time)

08:10 ~ 08:30 IN Pre-meeting

08:30 - Start of IN

· Slim DVDRW Feb-Mar 09

· Slim Combo Feb-Mar 09

Dial-in number : +65 6668 7508

Password: 703815

<Pre-IN information>

Jan 08 Pricing/TAM share

<Slim DVDRW>

Position Company TAM Price

No.1 TSST 40% ~\$27.55

No.2 HLDS 30% ~\$27.58

No.3 Optiarc 20% \$27.68

No.4 PLDS 10% \$27.75

No.5 Pioneer 0% Unknown

<Slim Combo>

Position Company TAM Price

No.1 TSST 40% ~\$22.25

No.2 Optarc 30% \$22.65

No.3 HLDS 20% \$27.67

No.4 Teac 10% Unknown

Please let me know if you have any questions.

Thanks & Regards,

Vincent

QUANTA_HAW2385**Metadata**

Atttitle	250	ORIGINAL
BegAttach	HAW00002385	ORIGINAL
Cc	Shu-ming.Tzeng ; Anita.Yin ; Barney.Wen ; Vivid.wen	ORIGINAL
Company	Quanta	ORIGINAL
Custodian	Chen, Haw	ORIGINAL
Docdate	12/13/2007 17:27:16 -0800	ORIGINAL
Docid	QUANTA_HAW_00000567	ORIGINAL
DocType	Message	ORIGINAL
EndAttach	HAW00002394	ORIGINAL
Famlyrng	HAW00002385 - HAW00002390	ORIGINAL
Filepath	archive///250	ORIGINAL
FolderID	archive	ORIGINAL
From	haw.chen <MAILER-DAEMON>	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	80086aea2768be0b06e59670b01b64f2	ORIGINAL
Lang	English	ORIGINAL
Pgcount	5	ORIGINAL
Prprties	E-mail	ORIGINAL
Subject	RE: Slim RMSD IN Announcement - Feb & Mar FY09 Slim Combo & DVDRW PATA, Dec 13, 2007	ORIGINAL
To	haw.chen ; voka.chen	ORIGINAL

EXHIBIT 41

BEGIN:VCALENDAR
VERSION:2.0
PRODID:LibPST v0.6.53
BEGIN:VEVENT
DTSTAMP:20110712T230054Z
CREATED:20071224T033734Z
LAST-MOD:20071227T004137Z
SUMMARY:Dinner with PLDS/Jerry & Fannie
DESCRIPTION:Please kindly reserve your time for us! ^.^
DTSTART;VALUE=DATE-TIME:20071226T100000Z
DTEND;VALUE=DATE-TIME:20071226T113000Z
LOCATION:TPE
STATUS:TENTATIVE
CATEGORIES:NONE
END:VEVENT
END:VCALENDAR



QUANTA_HAW5152**Metadata**

Atttitle	368	ORIGINAL
Company	Quanta	ORIGINAL
Custdian	Chen, Haw	ORIGINAL
Docid	QUANTA_HAW_00001459	ORIGINAL
DocType	txt	ORIGINAL
Filepath	archive///368	ORIGINAL
FolderID	archive	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	644eac81f1edf82e46567226f0253eb3	ORIGINAL
Lang	English	ORIGINAL
Pgcount	1	ORIGINAL

EXHIBIT 42

From: haw.chen Chen Shang-Hao <MAILER-DAEMON>
Subject: RE: tomorrow night
To: Anita.Yin Yin Chia-An
Date: Tue, 25 Dec 2007 03:06:09 +0000

I don't feel nervous at all. It's just that when I just asked Shu-Ming to make an appointment for me to meet with PLDS Jerry Hsien, you know...

Anyway, I will check with him and let you know results. Anyway, it's just that we're spying on each other...

-----Original Message-----

From: Anita.Yin Yin Chia-An
Sent: Tuesday, December 25, 2007 10:55 AM
To: haw.chen Chen Shang-Hao
Subject: RE: tomorrow night

Don't be nervous, it is because Shu-Ming apply for traveling request.

From: haw.chen Chen Shang-Hao
Sent: Tuesday, December 25, 2007 10:53 AM
To: Anita.Yin Yin Chia-An
Subject: RE: tomorrow night

Why do you know? Actually I'd like to strategize with PLDS in preparation for next Dell IN as IN is too critical. Additionally, I want to check the number of their share. They get 5th position, 2nd, 4th, 3rd and 3rd from Nov. through March.

-----Original Message-----

From: Anita.Yin Yin Chia-An
Sent: Tuesday, December 25, 2007 10:31 AM
To: Shu-ming.Tzeng Tzeng Shu-Ming
Cc: haw.chen Chen Shang-Hao
Subject: tomorrow night

You are going to meet with PLDS tomorrow night. What is that?

Anita Yin

Sales & Marketing Division

Optical Storage BU



Tel: 886-3-3288090 ext. 1120

Cell: 886-936126357

Email: anita.yin@qsitw.com

<http://www.qsitw.com>

CERTIFICATE OF TRANSLATION ACCURACY


State of California
October 22, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00000787, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 43

From: Sally.huang 黃雅平 [Sally.huang@qsitw.com]
Sent: 4/10/2008 1:14:02 AM
To: 'Van Vorst, Steve' [Steve.Vanvorst@am.sonyec-optiarc.com]; 'Kitamura, Satoshi' [Satoshi.Kitamura@am.sonyec-optiarc.com]
CC: haw.chen 陳尚昊 [haw.chen@qsitw.com]; 'Amino, Masafumi' [Masafumi.Amino@jp.sonyec-optiarc.com]; 'Kishimoto, Tomoko' [Tomoko.Kishimoto@jp.sonyec-optiarc.com]
Subject: RE: RFQ for June to Aug 08--Part 2 run 3

Dear Steve:

Please help to quote US\$26.14 for Part 2 Run 3. No price change due to our target is Rank#4 for Part 2.

Thanks.

Sally
+886-955707205

From: Sally.huang 黃雅平
Sent: Tuesday, April 08, 2008 4:46 PM
To: 'Van Vorst, Steve'; Kitamura, Satoshi
Cc: haw.chen 陳尚昊; Amino, Masafumi; Kishimoto, Tomoko
Subject: RFQ for June to Aug 08--Part 2 run 1

Dear Steve:

Please help to quote US\$26.14 for Part 2 Run 1.

Thanks.

Sally
+886-955707205

From: Van Vorst, Steve [mailto:Steve.Vanvorst@am.sonyec-optiarc.com]
Sent: Monday, April 07, 2008 9:56 PM
To: Sally.huang 黃雅平; Kitamura, Satoshi
Cc: haw.chen 陳尚昊; Amino, Masafumi; Kishimoto, Tomoko
Subject: RE: RFQ for June to Aug 08

Dear Sally,

Thank you. The bid for \$25.74 has been entered.

Regards,
Steve

Steve Van Vorst
Sony NEC Optiarc, Amercia Inc.



1730 North First Street
San Jose, Ca. 95112
office: 408-352-4890
mobile: 408-550-5354
steve.vanvorst@am.sonyec-optiarc.com

408-550-5354

NEW CELL # FROM 12/14/07

From: Sally.huang@qsitw.com [mailto:Sally.huang@qsitw.com]
Sent: Monday, April 07, 2008 6:30 AM
To: Kitamura, Satoshi; Van Vorst, Steve
Cc: haw.chen@qsitw.com; Amino, Masafumi; Kishimoto, Tomoko
Subject: RE: RFQ for June to Aug 08

Dear Steve:

Please help to quote 25.74 for final run . Thanks.

Dear all:

This quotation is for Rank#3.

Sally

From: Sally.huang 黃雅平
Sent: 2008/4/4 [星期五] 下午 06:01
To: Kitamura, Satoshi; Van Vorst, Steve
Cc: haw.chen 陳尚昊; Amino, Masafumi; Kishimoto, Tomoko
Subject: RE: RFQ for June to Aug 08
Dear Steve:

Please help to quote 25.94 for 2nd run.

Dear all:

We don't want to be aggressive for this run since TSST is not willing to be aggressive for this portion RFQ.

Sally

From: Kitamura, Satoshi [mailto:Satoshi.Kitamura@am.sonyec-optiarc.com]
Sent: 2008/4/3 [星期四] 下午 02:21
To: Van Vorst, Steve; Sally.huang 黃雅平
Cc: haw.chen 陳尚昊; Amino, Masafumi; Kishimoto, Tomoko
Subject: RE: RFQ for June to Aug 08

Steve,

If we don't hear anything from Tokyo on this by tomorrow morning,
it should be OK.

Anyway, I guess we have until 2pm PST.

Regards,
Toshi

From: Van Vorst, Steve
Sent: Wednesday, April 02, 2008 10:50 PM
To: Kitamura, Satoshi; 'Sally.huang@qsitw.com'
Cc: 'haw.chen@qsitw.com'; Amino, Masafumi; Kishimoto, Tomoko
Subject: RE: RFQ for June to Aug 08
Toshi,

I was going to input tomorrow so no problem. Is there a timeframe that is okay?

Regards,
Steve

Steve Van Vorst
Sony NEC Optiarc, Amercia Inc.
1730 North First Street
San Jose, Ca. 95112
office: 408-352-4890
mobile: 408-550-5354
steve.vanvorst@am.sonyec-optiarc.com

408-550-5354
NEW CELL # FROM 12/14/07

From: Kitamura, Satoshi
Sent: Wednesday, April 02, 2008 10:46 PM
To: Sally.huang@qsitw.com; Van Vorst, Steve
Cc: haw.chen@qsitw.com; Amino, Masafumi; Kishimoto, Tomoko
Subject: RE: RFQ for June to Aug 08

Steve,

Please don't quote this yet, please wait until tomorrow.

Regards,
Toshi

From: Sally.huang@qsitw.com [mailto:Sally.huang@qsitw.com]

Sent: Wednesday, April 02, 2008 10:42 PM

To: Van Vorst, Steve

Cc: Kitamura, Satoshi; haw.chen@qsitw.com

Subject: RFQ for June to Aug 08

Dear Steve:

Please help to quote US\$25.98 for first run. You can call me+886-955707205 if any issue you have.

Sally

Q321785**Metadata**

Date Received	04/09/2008 00:00:00	ORIGINAL
Date Sent	04/09/2008 00:00:00	ORIGINAL
Document Extension	msg	ORIGINAL
Email CC Text	haw.chen <haw.chen@qsitw.com>; 'Amino, Masafumi' <Masafumi.Amino@jp.sony-nec-optiarc.com>; 'Kishimoto, Tomoko' <Tomoko.Kishimoto@jp.sony-nec-optiarc.com>	ORIGINAL
Email From Text	Sally.huang <Sally.huang@qsitw.com>	ORIGINAL
Email Subject	RE: RFQ for June to Aug 08--Part 2 run 3	ORIGINAL
Email TO Text	'Van Vorst, Steve' <Steve.Vanvorst@am.sony-nec-optiarc.com>; 'Kitamura, Satoshi' <Satoshi.Kitamura@am.sony-nec-optiarc.com>	ORIGINAL
Extracted Text	.\Q015\TEXT\TEXT001\Q000321785.txt	ORIGINAL
File Name	RFQ for June to Aug 08--Part 2 run 3 (28.4 KB).msg	ORIGINAL
File Size	47616.00	ORIGINAL
MD5 Hash	3AE82183C12B9F9800B54190AE6AF076	ORIGINAL
OriginalDocID	Q000321785	ORIGINAL

EXHIBIT 44

From: haw <haw.chen@qsitw.com>
Subject: FW: Slim RMSD IN - Reversed Auction - April DVDRW & COMBO PATA Tray Drives - Feb 18, Monday
To: voka.chen Chen Jian-Sian
Date: Fri, 23 May 2008 08:33:27 +0000

Dear Voka,

For Apr MVA, I will check again.

But I remember P&L estimation for Feb was already marginal, Mar is losing money as below, around \$0.6n loss for combo and RW. Apr is even worse, originally we try to down 10 cents. But Dell gives us 0 TAM, so we lower the price to deplete the inventory.

As Mar P&L is negative, so we proposed EOL in Mar/E. That's the story from Feb RFQ through Apr and even Q2.

One more. For Feb MVA, I have discussed with Shuming and William. I will explain to you later. As for Apr MVA, I have to check with Shuming and William again.

Thanks,

Haw

From: haw.chen Chen Shang-Hao
Sent: Friday, February 15, 2008 8:21 PM
To: voka.chen Chen Jian-Sian
Cc: Anita Yin Yin Chia-An; Shu-ming.Tzeng Tzeng Shu-ming; sarah.tseng Tseng Ron-Lan
Subject: FW: Slim RMSD IN - Reversed Auction - April DVDRW & COMBO PATA Tray Drives - Feb 18, Monday

Dear Voka,

It's new rules for Apr IN which was finally decided to be hold on Feb/18. Practice session will be starting from 9:00 to 10:00, formal IN from 2:00...

Rules:

1. Combo starting from 20.0, RW from 23.5. the bid will move 0.1 per minute.



2. 1st and 2nd position will share 60% and 30%, others by off line negotiation.
3. Sorry I made a mistake in explaining to you the 3rd and 4th positions. In reality, there will be 1st and 2nd positions after 2 rounds of bidding. There's really no 3rd and 4th positions; basically, the last two positions will just get ready for off line negotiation for the 10%.

Competitors status

1. TSST also mentioned that 1st place will definitely face COS issue. Anyway I believe TSST still will be most aggressive.
2. HLDS even not so aggressive to get number 2, they said if possible (pricing is not too bloody), they have intention to get number 2.
3. Jerry said that he must obtain one of the last two positions, (2-3 weeks ago, they quoted 0.1 lower than Mar. similar to us.) I believe in last RFQ nobody really reduced, therefore we are having this Apr IN.
4. Optiarc, TSST, HLDS, PLDS join RW
5. Optiarc, TSST, HLDS, Teac join combo (we are still checking if Teac join combo, will let you know later).

Our P&L analysis

1. Looking at Feb cost (not MVA), RW loss USD\$0.5 at 25.94 (Mar. pricing is 26.04), 10 cents decrease from Mar.
2. looking at Feb cost, combo loss USD\$0.6 at 23.50 (Mar. pricing is 21.60), 10 cents decrease from Mar.
3. I would suggest quoting 25.94 for RW, and 23.5 for combo, 10 cents decrease from Mar for both combo and RW.

Allocation expectation

I believe we can still get allocation from off line negotiation and get some compensation by shu-ming's strong relationship with buyer.

If you feel any ideas, please let us know.

Thanks,

Haw

From: Alex_Wu@dell.com [mailto:Alex_Wu@dell.com]
Sent: Thursday, February 14, 2008 2:37 PM
Cc: Swee_Yuen_Chan@dell.com; Tong_Leong_Chan@dell.com; Ricky_Sim@dell.com;
Hon_Man_Cheung@dell.com; Alex_Oon@dell.com
Subject: Slim RMSD IN - Reversed Auction - April DVDRW & COMBO PATA Tray Drives - Feb 18, Monday

Hi all RMSD Supplier Account Managers (in Bcc list),

As you know that we're going to do a special IN using the Reversed Auction for the April TAM of Slim DVDRW (PATA Tray) and Slim Combo/DVD (PATA Tray), herein below are the general guidelines and schedules, for your perusal. Please be sure to review/examine all the notes in the below details, and also double check if your account and password to the Ariba IN tools is valid. Our IN will be co-ordinated by Chan Swee Yuen.

Practice IN: we'll do a practice bid in the morning of Feb 18th, Swee Yuen will send you the guidelines. Please be prepared.

Formal IN: Slimline 12.7mm Tray-load DVDRW & Combo PATA Drives April FY09 TAM - Reversed Auction (RDA IN) - 1.30pm, Feb 18th, 2008, Monday

Bidding Process: We'll start with reversed auction for DVDRW 1st winner, and then move to bid for the Combo 1st winner while this can give Swee Yuen some time to set up for the DVDRW 2nd winner bid. When the Combo 1st winner bid is closed, we'll then start the DVDRW 2nd winner bid and eventually to have the Combo 2nd winner bid as the last event for the entire day. This may look a bit complex, please call me if you need further clarification or discussion. Thanks.

Generalization:

1. **Configurations:** Bare Drive. Same or lower than the March assembly cost adders must be applied for April as a commitment to get to this bid. Should any cost adders be updated please send me prior to COB 2/15 Friday.
2. **Warranty:**
 - i. DVDRW - included;
 - ii. Combo - excluded.
3. **Participating Suppliers:** Current suppliers
4. **Starting Bid:**
 - I. DVDRW - \$23.50
 - II. Combo - \$20.00
5. **Bid Increment:** US\$ 0.10
6. **Timed event:** The bid will move @ \$0.10 for every 1 minute. In total there'll be 2 winners for each drive throughout this IN (i.e. 1st & 2nd TAM awards to DVDRW & Combo respectively)
7. **Rounds of Auctions:** 2 rounds for the 1st and 2nd places of TAM awards only. The first supplier to reach the price point wins the award. The first winner can't participate in the 2nd round bidding for the 2nd place TAM awards.

8. **TAM Awards: 60% (1st place bidder), 30% (2nd place), the rest 10% is for off-line negotiations.**

- Caution: Your drives must be qualified to ship in the bidded month to be able to get TAM awarded.

- Award is contingent on supplier having 10 DSI in the hubs at the beginning of the month, ample supply in the hubs at all times, and meeting quality requirements.

9. As always, by participating in this IN, suppliers are confirming their ability to support the volume/TAM award they win. TAM awards come with the expectation that suppliers will meet all current COS and quality requirements.

Note: If this IN event does not align with Dell's expectations, Dell reserves the right to :

- Shut down the event early and accept or void any and all bids from each participant.
- Change the strategy of the IN event to have a 10 minutes blind bid at the end of events

Let me know if you have any questions. Pls confirm acceptance of this IN by email and provide your contact number for the events.

Best Regards

Alex WU | RMSD GCM | DELL WWP Singapore | Office: +65 6823 6154 | Mobile: +65 9145 0160 | Fax: +65 6829 1154 |
E-mail: alex_wu@dell.com

CERTIFICATE OF TRANSLATION ACCURACY

State of California

October 22, 2013

Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00002989, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 45

From: <MAILER-DAEMON>
Subject: RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details
To: haw.chen Chen Shang-Hao; voka.chen Chen Jian-Sian
Cc: Shu-ming.Tzeng Tzeng Shu-Ming; Anita.Yin Yin Chia-An

Dear Voka,

We gave up at \$34.29 for Aug. GCM said we are still USD\$2 away from HLDS and TSST including housing adder.

Because of adder, our cost is approximately a dollar more than that of other suppliers, so

From: haw.chen Chen Shang-Hao
Sent: Wednesday, May 28, 2008 7:27 PM
To: haw.chen Chen Shang-Hao; voka.chen Chen Jian-Sian
Cc: Shu-ming.Tzeng Tzeng Shu-Ming; Anita.Yin Yin Chia-An
Subject: RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Dear Voka,

Correct the adder and warranty removal of 1% for slot

Bottom 1 will be \$1 drop at \$34.64 for bare drive.

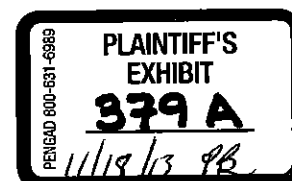
Bottom 2 will be \$1.5 drop at \$34.14.

BTW, for zero warranty issue,

1. slot: we need to remove 1% for current drive. Since our 087 and 088 will not have 1% reduction, I suggest slot load be reduced 1%.

2. 087 and 088: PLDS and HLDS both reduced by 15 cents. Currently, we have reduced 10 cents (around 0.4%). PLDS will insist on 15 cents, then we will not have so much pressure to maintain at 10 cents... we definitely cannot hold on to the original 5 cents reduction...

Thanks,
Haw



From: haw.chen Chen Shang-Hao
Sent: Wednesday, May 28, 2008 6:34 PM
To: voka.chen Chen Jian-Sian
Cc: Shu-ming.Tzeng Tzeng Shu-Ming; Anita.Yin Yin Chia-An
Subject: RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Dear Voka,

Our IN pricing proposal for Aug and Sep are as follows. Q2 price is \$35.78 after warranty removal. I am proposing 2 bottom lines, one with \$1.0 drop, last one with \$1.5 drop. The IN will be focusing on bare drive only and the P&L analysis with 2 bottom lines are shown below.

1. we are only supplier supporting PATA and SATA slot. Even if SATA pricing is worse than the pricing of TSST and HLDS, our PATA pricing should still be better than TEAC and Pioneer's price. So if we can secure PATA's share, no need to worry too much about SATA.

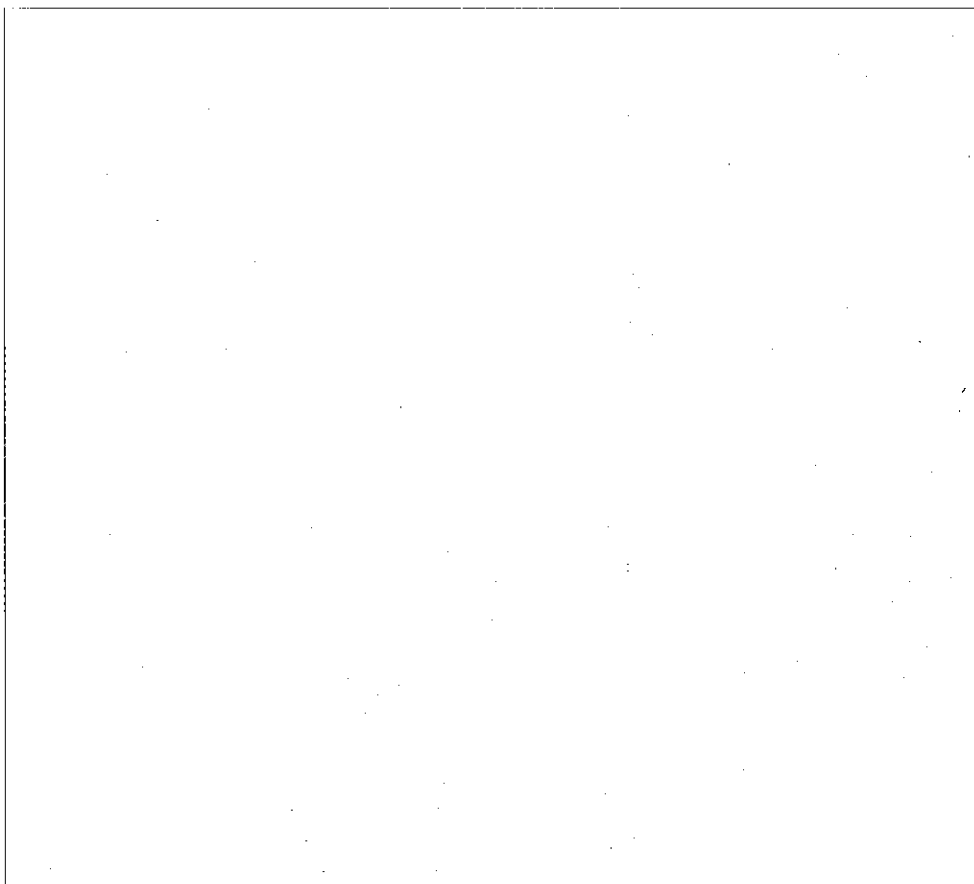
2. Additionally, both HLDS and TSST only RST in July or August, they shouldn't be too aggressive for August and September shares.

3. Right now it looks like slot PATA's TAM still occupies over 40% of total slot TAM even until October. So if we secure PATA then we do not need to worry too much about SATA's IN position,

So we will see if HLDS has the intention to take second place. If HLDS must take second place, we will not compete with them for it, what do you think?

Thanks,

Haw



From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]

Sent: Wednesday, May 28, 2008 3:32 PM

To: 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); Shu-ming.Tzeng Tzeng Shu-Ming;
haw.chen Chen Shang-Hao; Anita.Yin Yin Chia-An

Subject: RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Hi Team,

Alex have changed the IN timing as follows:

IN Event Schedule:

1. 12.7mm SATA Slot DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **8.30am** (Singapore time)

- Forecasted Volume: 370k+ (Aug); 330k+ (Sep)

As such, please find the change in our timing:

Date: 5/29 (Thurs)

08:15 - 08:30 IN Pre-meeting

08:30 ~ Start of IN

Please use the following dial-in # for the IN:

Tel: +65 6668 7508

Passcode: 703815

To access Ariba Sourcing, please use the following:

<https://esourcing.dell.com/Sourcing/isp/en/trader/market/EventDetail.jsp?passwordadapter=SourcingSupplierUser&marketId=233001>

ID: vincent.chng@ap.sony.com

Password: Chngchv999

For the start bid price for 12.7mm Slot SATA DVDRW, we will use Q2 price with 1% Warranty cost removal = US\$36 -1% = **US\$35.64.**

Thanks & Rgds,

Vincent Chng

From: Chng, Vincent

Sent: Wednesday, May 28, 2008 9:43 AM

To: 'Sato, Tomio'; Mikami, Junsuke; Amino, Masafumi (Optiarc); Shu-ming.Tzeng@qsitw.com; 'haw'; Anita.Yin@qsitw.com

Subject: FW: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Importance: High

Hi Team,

Please note the confirmation for tomorrow 12.7mm Slot SATA DVDRW FY09 Q3 IN.

IN Event Schedule:

1. 12.7mm SATA Slot DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **9.00am** (Singapore time)

- Forecasted Volume: 370k+ (Aug); 330k+ (Sep)
- Number of Suppliers = 3 (Optiarc/HLDS/TSST)

As always, we will have a IN Pre-meeting before start of IN:

Date: 5/29 (Thurs)

08:30 - 09:00 IN Pre-meeting

09:00 ~ Start of IN

Please use the following dial-in # for the IN:

Tel: +65 6668 7508

Passcode: 703815

Please let me know if there are any questions.

Thanks & Rgds,

Vincent Chng

From: Alex_Wu@dell.com [mailto:Alex_Wu@dell.com]

Sent: Tuesday, May 27, 2008 6:47 PM

To: Alex_Wu@dell.com

Cc: Swee_Yuen_Chan@dell.com; Tong_Leong_Chan@dell.com; Ricky_Sim@dell.com

Subject: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Importance: High

Hi all RMSD Supplier Account Managers (in Bcc list),

Kindly be advised of the below details regarding the upcoming Internet Negotiations (IN) for the Q3 FY09 Slim SATA Slot & Tray DVDRWs, kindly note this IN is for Aug & Sept TAM only, the Oct TAM will be determined through a separate event sometime later.

Please be sure to review/examine all the notes in the below details, and also double check if your account and password to the ARIBA IN tools is valid. Our IN will be coordinated by Chan Swee Yuen.

IN Overview & Parameters

- **Configurations:** Bare Drive. Same or lower than the Q2 assembly cost adders must be applied for Q3 as a commitment to get to this bid. Should any cost adders be updated please send me prior to COB 5/28 Wed.
 - **Warranty:** No - all ODD goes for self-insure from now.
 - **No of Suppliers:** 3, only eligible to the incumbent suppliers. Please don't try to log in to the event that you're not in the current supply base.
 - **Monthly Bidding:** For Aug & Sept 2008 (Separate Events)
 - **Starting Bid:** Suppliers' off-line Aug pre-quoted Price will be used as the opening bid for Aug. The opening bid for Sept event must be equal to or lower than the Aug ending bid.
 - **Bid Decrement:** US\$ 0.05
 - **Time Event:** Each event for 15 minutes with 2 minutes extension, open-ended. Dec event will start when the Nov event closes.
-

Please do not try to beat the clock, get your bids in before the IN closes. The bids in the tool when time runs out are final.

- **TAM Split: 45% (1st bidder), 30% (2nd bidder), 15% (3rd bidder), and 10% reserved for GCM's open allocation.**

- Caution: Your drives must be qualified to ship in the bid month to be able to get TAM awarded.

- Award: Award is contingent on supplier having 10 DSI in the hubs at the beginning of the month, ample supply in the hubs at all times, and meeting quality requirements.

- New Rule: From now on suppliers' previous quarter performance will be built into the final TAM award process – meaning Dell RMSD Team will tie in suppliers' QBR score for a TAM reward/deduction when

applicable. The applicable reward/deduction will be communicated to suppliers in the final TAM allocation discussion after the IN.

IN Event Schedule:

1. 12.7mm SATA Slot DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **9.00am** (Singapore time)

- Forecasted Volume: 370k+ (Aug); 330k+ (Sep)

&

2. 12.7mm SATA Tray DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **1.00pm** (Singapore time)

- Forecasted Volume: 135k+ (Aug); 170k+ (Sep)

IN General Rule & Conditions

- View to rank only.
- No ties – the first supplier to reach the price point wins the award.
- This will be an open-ended events; 15 minutes of initial bidding time and with 2-minute extensions.
- You need to make best effort to be aggressive during this event. The system clock may not show on second for the last 5 seconds and so to ensure your bid is accepted by the tool, the Dell team highly recommend that don't try to beat the clock but to enter your bid at least 1 minute before the IN tool shuts down.
- As always, by participating in this IN suppliers are confirming their ability to support the volume/TAM award they win. TAM awards come with the expectation that suppliers will meet all current COS & quality requirements
- The above provided Forecast volumes are subject to change and fluctuation

based on future market conditions and trend shifts during the actual shipping months

Note: If this IN event does not align with Dell's expectations, Dell reserves the right to:

- Shut down the event early and accept or void any and all bids from each participant.
- Change the strategy of the IN event to have a 10 minutes blind bid at the end of events.

Let me know if you have any questions. Please confirm acceptance of this IN by email and provide your contact number for the events.

Best Regards

Alex WU | RMSD GCM | DELL WWP Singapore | Office: +65 6823 6154 | Mobile: +65 9145 0160 | Fax: +65 6829 1154 | E-mail: alex_wu@ dell.com

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CERTIFICATE OF TRANSLATION ACCURACY

State of California
October 22, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00002328, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 46

From: haw.chen 陳尚昊 <MAILER-DAEMON>
Subject: RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details
To: Shu-ming.Tzeng 曾淑明
Date: Fri, 30 May 2008 08:28:13 +0000

Jerry said SATA RW price, TSST and HLDS is around \$24.6, PLDS keep high at \$27. But my phone is quite noisy. I am sure \$24.6 of TSST, not sure about 27 of PLDS. Need to check again. He say the TAM is only hundred something thousands.

In that case, our PATA can keep as high as possible.

From: haw.chen 陳尚昊
Sent: Friday, May 30, 2008 4:14 PM
To: voka.chen 陳堅祥
Cc: Anita.Yin 陰家恩; Shu-ming.Tzeng 曾淑明
Subject: FW: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Dear Voka,

Below is the Aug and Sep IN results. We are still USD\$2+ higher than TSST and HLDS. According to IN rule, we can get 15% TAM. But HLDS RTS is Aug/M, supposedly we can get 20% TAM.

For PATA, we should be able to get 50% share among 250K TAM per month.

SATA: $300K * 20\% = 60K$

PATA: $250K * 50\% \sim 125K$

We should be able to get 180K each in Aug and Sep.

Supplier	Aug 08	Ranking	Sep 08	Ranking
TSST	\$32.30	1	\$31.80	1
HLDS	\$32.34	2	\$31.84	2



Optiarc	\$34.29	3	\$34.24	3
---------	---------	---	---------	---

Thanks,

Haw

From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]

Sent: Thursday, May 29, 2008 11:05 AM

To: 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); Shu-ming.Tzeng 曹淑明; haw.chen 陳尚昊; Anita.Yin 陰家恩

Subject: RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Team,

Thanks for the taking time to support the 12.7mm Slot SATA DVDRW IN for FY09 Q3 (Aug-Sep).

Please see below the summary of the IN:

Supplier	Aug 08	Ranking	Sep 08	Ranking
TSST	\$32.30	1	\$31.80	1
HLDS	\$32.34	2	\$31.84	2
Optiarc	\$34.29	3	\$34.24	3

Note:

- TSST RTS is May 08
- HLDS RTS is Aug 08. HLDS RFQ price was \$32.34 (This price is w/o warranty). I believe their actual RFQ price for Q3 is \$32.50 since they offer 0.5% Warranty cost reduction in the first proposal.

HLDS did not move at all during the Aug IN as his RFQ price was no.1 Ranking. However, TSST reduce price all the way to be no.1.

In Sep IN, HLDS tried to gain back no 1 but was not successful as TSST doesn't seem to stop dropping price.

Thanks & Rgds,

Vincent Chng

From: Chng, Vincent

Sent: Wednesday, May 28, 2008 3:32 PM

To: 'Sato, Tomio'; 'Mikami, Junsuke'; Amino, Masafumi (Optiarc); 'Shu-ming.Tzeng@qsitw.com'; 'haw'; 'Anita.Yin@qsitw.com'

Subject: RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Hi Team,

Alex have changed the IN timing as follows:

IN Event Schedule:

1. 12.7mm SATA Slot DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **8.30am** (Singapore time)

- Forecasted Volume: 370k+ (Aug); 330k+ (Sep)

As such, please find the change in our timing:

Date: 5/29 (Thurs)

08:15 - 08:30 IN Pre-meeting

08:30 ~ Start of IN

Please use the following dial-in # for the IN:

Tel: +65 6668 7508

Passcode: 703815

To access Ariba Sourcing, please use the following:

<https://esourcing.dell.com/Sourcing/jsp/en/trader/market/EventDetail.jsp?passwordadapter=SourcingSupplierUser&marketId=233001>.

ID: vincent.chng@ap.sony.com

Password: Chngchv999

For the start bid price for 12.7mm Slot SATA DVDRW, we will use Q2 price with 1% Warranty cost removal = US\$36 -1% = **US\$35.64**.

Thanks & Rgds,

Vincent Chng

From: Chng, Vincent

Sent: Wednesday, May 28, 2008 9:43 AM

To: 'Sato, Tomio'; Mikami, Junsuke; Amino, Masafumi (Optiarc); Shu-ming.Tzeng@qsitw.com; 'haw'; Anita.Yin@qsitw.com

Subject: FW: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Importance: High

Hi Team,

Please note the confirmation for tomorrow 12.7mm Slot SATA DVDRW FY09 Q3 IN.

IN Event Schedule:

1. 12.7mm SATA Slot DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **9.00am** (Singapore time)

- Forecasted Volume: 370k+ (Aug); 330k+ (Sep)
- Number of Suppliers = 3 (Optiarc/HLDS/TSST)

As always, we will have a IN Pre-meeting before start of IN:

Date: 5/29 (Thurs)

08:30 - 09:00 IN Pre-meeting

09:00 ~ Start of IN

Please use the following dial-in # for the IN:

Tel: +65 6668 7508

Passcode: 703815

Please let me know if there are any questions.

Thanks & Rgds,

Vincent Chng

From: Alex_Wu@dell.com [mailto:Alex_Wu@dell.com]

Sent: Tuesday, May 27, 2008 6:47 PM

To: Alex_Wu@dell.com

Cc: Swee_Yuen_Chan@dell.com; Tong_Leong_Chan@dell.com; Ricky_Sim@dell.com

Subject: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details

Importance: High

Hi all RMSD Supplier Account Managers (in Bcc list),

Kindly be advised of the below details regarding the upcoming Internet Negotiations (IN) for the Q3 FY09 Slim SATA Slot & Tray DVDRWs, kindly note this IN is for Aug & Sept TAM only, the Oct TAM will be determined through a separate event sometime later.

Please be sure to review/examine all the notes in the below details, and also double check if your account and password to the ARIBA IN tools is valid. Our IN will be coordinated by Chan Swee Yuen.

IN Overview & Parameters

- Configurations: Bare Drive. Same or lower than the Q2 assembly cost adders must be applied for Q3 as a commitment to get to this bid. Should any cost adders be updated please send me prior to COB 5/28 Wed.
- Warranty: No – all ODD goes for self-insure from now.
- No of Suppliers: 3, only eligible to the incumbent suppliers. Please don't try to log in to the event that you're not in the current supply base.
- Monthly Bidding: For Aug & Sept 2008 (Separate Events)
- Starting Bid: Suppliers' off-line Aug pre-quoted Price will be used as the opening bid for Aug. The opening bid for Sept event must be equal to or lower than the Aug ending bid.
- Bid Decrement: US\$ 0.05
- Time Event: Each event for 15 minutes with 2 minutes extension, open-ended. Dec event will start when the Nov event closes.

Please do not try to beat the clock, get your bids in before the IN closes. The bids in the tool when time runs out are final.

- **TAM Split: 45% (1st bidder), 30% (2nd bidder), 15% (3rd bidder), and 10% reserved for GCM's open allocation.**

- Caution: Your drives must be qualified to ship in the bid month to be able to get TAM awarded.

- Award: Award is contingent on supplier having 10 DSI in the hubs at the beginning of the month, ample supply in the hubs at all times, and meeting quality requirements.

- New Rule: From now on suppliers' previous quarter performance will be built into the final TAM award process – meaning Dell RMSD Team will tie in suppliers' QBR score for a TAM reward/deduction when

applicable. The applicable reward/deduction will be communicated to suppliers in the final TAM allocation discussion after the IN.

IN Event Schedule:

1. 12.7mm SATA Slot DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **9.00am** (Singapore time)

- Forecasted Volume: 370k+ (Aug); 330k+ (Sep)

&

2. 12.7mm SATA Tray DVDRW IN for Aug & Sept of Q3 FY09

Date: May 29th '08 (Thursday). Time: **1.00pm** (Singapore time)

- Forecasted Volume: 135k+ (Aug); 170k+ (Sep)

IN General Rule & Conditions

- View to rank only.
- No ties – the first supplier to reach the price point wins the award.
- This will be an open-ended events; 15 minutes of initial bidding time and with 2-minute extensions.
- You need to make best effort to be aggressive during this event. The system clock may not show on second for the last 5 seconds and so to ensure your bid is accepted by the tool, the Dell team highly recommend that don't try to beat the clock but to enter your bid at least 1 minute before the IN tool shuts down.
- As always, by participating in this IN suppliers are confirming their ability to support the volume/TAM award they win. TAM awards come with the expectation that suppliers will meet all current COS & quality requirements
- The above provided Forecast volumes are subject to change and fluctuation based on future market conditions and trend shifts during the actual shipping months

Note: If this IN event does not align with Dell's expectations, Dell reserves the right to:

- Shut down the event early and accept or void any and all bids from each participant.
- Change the strategy of the IN event to have a 10 minutes blind bid at the end of events.

Let me know if you have any questions. Please confirm acceptance of this IN by email and provide your contact number for the events.

Best Regards

Alex WU | RMSD GCM | DELL WWP Singapore | Office: +65 6823 6154 | Mobile: +65 9145 0160 | Fax: +65 6829 1154 | E-mail: alex_wu@dell.com

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Filepath	haw0805/0805//242	ORIGINAL
FolderID	haw0805	ORIGINAL
From	haw.chen <MAILER-DAEMON>	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	0406663836a4075b9da5775b61f1bfa6	ORIGINAL
Lang	English	ORIGINAL
Pgcount	8	ORIGINAL
Subject	RE: Slim RMSD Internet Negotiation Q3 FY09 - 5/29 - 12.7mm SATA Slot DVDRW & Tray DVDRW - Supplier Notice of IN Details	ORIGINAL
To	Shu-ming.Tzeng	ORIGINAL

EXHIBIT 47

X-BigFish: VS-
 124(zza6W14c3M3b49KfadRa0dJ11ffM14ffO62a3L11e2K148cM936fQ3117K145fM827R9371Pa6Tf4eM1127izz31iz186M221cRz2dh6bh61h)
X-Spam-TCS-SCL: 0:0
X-FB-SS: 5,5,
From: "Chng, Vincent" <Vincent.Chng@ap.sony.com>
To: "Sato, Tomio" <Tomio.Sato@jp.sonyec-optiarc.com>, "Junsuke.Mikami@jp.sonyec-optiarc.com" <Junsuke.Mikami@jp.sonyec-optiarc.com>, "Amino, Masafumi (Optiarc)" <masafumi.amino@jp.sonyec-optiarc.com>, "haw.chen@qsitw.com" <haw.chen@qsitw.com>, "Shu-ming.Tzeng@qsitw.com" <Shu-ming.Tzeng@qsitw.com>
Date: Tue, 26 Aug 2008 11:47:16 +0800
Subject: RE: RMSD Internet Negotiation Announcement - Slim DVDRW, Q4FY09 Nov & Dec, 8/25 & 8/26 N Days - Supplier Notice of N Details
Thread-Topic: RMSD Internet Negotiation Announcement - Slim DVDRW, Q4FY09 Nov & Dec, 8/25 & 8/26 N Days - Supplier Notice of N Details
In-Reply-To:
 <E196D23B3268D94AB42F054E26E9D20A01458B61AA43@APSNXMS01.ap.sony.com>
Content-Language: en-US
X-OriginalArrivalTime: 26 Aug 2008 03:47:59.0296 (UTC) FILETIME=[88462C00:01C9072E]

Hi All,

Thanks for taking time to participate in the IN. It was really tough.

The below is the result for the IN:

<12.7mm Tray PATA DVDRW>

Supplier	Nov 08	Dec 08
TSST	\$24.25	\$24.10
HLDS	\$24.30	\$24.15
Optiarc	\$24.90	\$24.80

<12.7mm Tray SATA DVDRW>

Supplier	Oct 08	Nov 08	Dec 08
TSST	\$24.60	\$24.39	\$24.19
HLDS	\$24.61	\$24.43	\$24.23
PLDS	\$25.50	\$25.40	\$25.20
Optiarc		\$24.45	\$24.25

*HLDS Nov 08 \$24.43 is their Q4 RFQ Price.

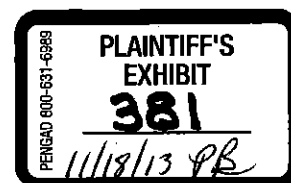
<12.7mm Slot SATA DVDRW>

Supplier	Oct 08	Nov 08	Dec 08
TSST	\$31.75*	\$31.34	\$31.34
HLDS	\$31.80	\$31.35	\$31.35
Optiarc	\$34.24	\$32.34	\$31.69

*Estimation

HLDS \$31.35 is their Q4 RFQ price. (They provided Q3 and Q4 price in their RFQ submission)

According to HLDS, PLDS RFQ price for Jan 09 is below \$31. (I will check out this price)



Thanks & Rgds,

Vincent Chng

From: Chng, Vincent
Sent: Friday, August 22, 2008 9:38 AM
To: 'Sato, Tornio'; 'Junsuke.Mikami@jp.sonyec-optlarc.com'; Amino, Masafumi (Optlarc); 'haw.chen@qsltw.com'; 'Shu-ming.Tzeng@qsltw.com'
Subject: RE: RMSD Internet Negotiation Announcement - Slim DVDRW, Q4FY09 Nov & Dec, 8/25 & 8/26 IN Days - Supplier Notice of IN Details

Hi All,

There has been some changes to the IN start time.

It has been pulled ahead to start at 8:30am.

Changes are shown in RED below.

Thanks & Rgds,

Vincent Chng

From: Chng, Vincent
Sent: Thursday, August 21, 2008 4:59 PM
To: 'Sato, Tornio'; 'Junsuke.Mikami@jp.sonyec-optlarc.com'; Amino, Masafumi (Optlarc); 'haw.chen@qsltw.com'; 'Shu-ming.Tzeng@qsltw.com'
Subject: FW: RMSD Internet Negotiation Announcement - Slim DVDRW, Q4FY09 Nov & Dec, 8/25 & 8/26 IN Days - Supplier Notice of IN Details

Hi All,

Please find the arrangement for next week's IN.

<12.7mm Tray/SATA PATA DVDRW - Nov & Dec 08>

*Note - Time is based on Singapore time.

Date: 25 Aug 08 (Mon)

Time:

08:15 - 08:30 IN Pre-meeting

08:30 ~ Start of 12.7mm Tray PATA DVDRW

13:15 - 13:30 IN Pre-meeting

13:30~ Start of 12.7mm Tray SATA DVDRW

Please use the following dial-in # for the IN:

Tel: +65 6668 7508

Passcode: 703815

To access Ariba Sourcing, please use the following:

<https://esourcing.dell.com/Sourcing/sp/en/trader/market/EventDetail.jsp?passwordadapter=SourcingSupplierUser&marketId=233001>

ID: vincent.chng@ap.sony.com

Password: Chngchv999

Snapshot of pricing and competition:

Supplier	Oct 08	Remarks
TSST	\$24.50*	Assumption that TSST offered \$24.50 to try to get biggest TAM
HLDS	\$25.20*	HLDS will have a refresh in Nov 08 @ \$24.30 to deplete their PATA material
Optiarc	\$25.00	

*Estimation

Supplier	Aug 08	Sep 08	Oct 08	Nov 08
TSST	\$24.80	\$24.25	\$24.25	
HLDS	\$24.30	\$24.30	\$24.30	
PLDS	\$27.00	\$26.95	\$25.50	
Optiarc				\$24.50

*PLDS will have a refresh in Jan 09 at with launch price of \$25.00. Most likely, they will not go below \$25.00 with their current drive for Oct/Nov 08.

<12.7mm Slot SATA DVDRW - Nov & Dec 08>

Date: 26 Aug 08 (Tue)

Time:

08:15 - 08:30 IN Pre-meeting

08:30 ~ Start of 12.7mm Slot SATA DVDRW

Please use the following dial-in # for the IN:

Tel: +65 6668 7508

Passcode: 703815

To access Ariba Sourcing, please use the following:

<https://esourcing.dell.com/Sourcing/isp/en/trader/market/EventDetail.jsp?passwordadaptor=SourcingSupplierUser&marketId=233001>.

ID: vincent.chng@ap.sony.com

Password: Chngchv999

Snapshot of pricing and competition:

Supplier	Aug 08	Ranking	Sep 08	Ranking	Oct 08	Ranking
TSST	\$32.30	1	\$31.80	1	\$31.80*	1
HLDS	\$32.34	2	\$31.84	2	\$31.84*	2
Optiarc	\$34.29	3	\$34.24	3	\$34.24	3

*Estimation- There seems to be not much price negotiation done for Oct 08 and using Sep 08 price.

Let me know if there are any questions.

Thanks & Rgds,

Vincent Chng

From: Wu, Alex
Sent: Tuesday, August 19, 2008 6:41 PM
To: Wu, Alex
Cc: Chan, Tong Leong; Oon, Alex; Sim, Ricky; Chan, Swee Yuen
Subject: RMSD Internet Negotiation Announcement - Slim DVDRW, Q4FY09 Nov & Dec, 8/25 & 8/26 IN Days - Supplier Notice of IN Details

Hi All RMSD Supplier Account Managers (in Bcc list),

Kindly be advised of the below details regarding the upcoming Internet Negotiations (IN) for the Q4 FY09 Slim DVDRW drives. kindly note this IN is for Nov & Dec TAM only, the Jan TAM will be determined through a separate event sometime later.

Please be sure to review/examine all the notes in the below details, and also double check if your account and password to the ARIBA IN tools is valid. Our IN will be coordinated by Chan Swee Yuen.

IN Overview & Standard Parameters

- **Configurations:** Bare Drive. Same or lower than the previous quarter assembly cost adders must be applied for the bidding quarter as a commitment to get to this bid.

Should any cost adders be updated please send me prior to COB 8/22 Friday.
- **Warranty:** No – all ODD goes for self-insure from now.
- **Supplier base:** Only eligible to the incumbent suppliers. Please don't try to log in to the event that you're not in the current supply base.
- **Monthly Bid:** For Nov & Dec 2008 (Separate Events)
- **Starting Bid:** Suppliers' Oct price or the RFQ price will be used as the opening bid for Nov. The opening bid for Dec event must be equal to or lower than the Nov ending bid.
- **Bid Decrement:** US\$ 0.05
- **Time Event:** Each event for 15 minutes with 2 minutes extension, open-ended. Dec event will start when the Nov event closes.

Please do not try to beat the clock, get your bids in before the IN closes. The bids in the tool when time runs out are final.

- **TAM Split:** 3 Suppliers - 45% (1st bidder), 25% (2nd bidder), 10% (3rd bidder), and 20% reserved for GCM's off-line negotiation/allocation.

4 Suppliers - 45% (1st bidder), 25% (2nd bidder), 10% (3rd bidder), no guarantee to the 4th (last) bidder, and 20% reserved for GCM's off-line negotiation/allocation.

Supplier previous quarter's performance may be blended into the TAM award decision process for a reward & deduction point, however this won't be more than 5% +/- and GCM will inform the nominated supplier(s) in prior to the IN event.

Cautions:

- Your drives must be qualified to ship in the bid month to be able to get TAM awarded.
- Award is contingent on supplier having 10 DSI in the hubs at the beginning of the month, ample supply in the hubs at all times, and meeting quality requirements.

IN Event Schedule:

Day 1 – 8/25 Monday

Event I (morning section): 12.7mm PATA Tray DVDRW for Nov & Dec of Q4FY09

- Time: 9.00am (Singapore time)
- Forecasted Volume: 560k+ (Nov); 450k+ (Dec)
- No. of Suppliers: 3
- TAM will be awarded & locked for drive LTB, no further TAM change scheduled.

Event II (afternoon section): 12.7mm SATA Tray DVDRW for Nov & Dec of Q4FY09

- Time: 1.30pm (Singapore time)
- Forecasted Volume: 550k+ (Nov); 700k+ (Dec)
- No. of Suppliers: 4

Day 2 – 8/26 Tuesday

Event III (morning section): 12.7mm SATA Slot DYDRW for Nov & Dec of Q4FY09

- Time: 9.00am (Singapore time)
- Forecasted Volume: 450k+ (Nov); 450k+ (Dec)
- No. of Suppliers: 3

Event IV (afternoon section): 9.5mm SATA Tray DVDRW for Nov & Dec of Q4FY09

- Time: 1.30pm (Singapore time)
- Forecasted Volume: 210k+ (Nov); 300k+ (Dec)
- No. of Suppliers: 3

IN General Rule & Conditions

- View to rank only.
- No ties – the first supplier to reach the price point wins the award.
- This will be an open-ended events; 15 minutes of initial bidding time and with 2-minute extensions.
- You need to make best effort to be aggressive during this event. The system clock may not show on second for the last 5 seconds and so to ensure your bid is accepted by the tool, the Dell team highly recommend that don't try to beat the clock but to enter your bid at least 1 minute before the IN tool shuts down.
- As always, by participating in this IN suppliers are confirming their ability to support the volume/TAM award they win. TAM awards come with the expectation that suppliers will meet all current COS & quality

requirements.

- The above provided Forecast volumes are subject to change and fluctuation based on future market conditions and trend shifts during the actual shipping months.

Note: If this IN event does not align with Dell's expectations, Dell reserves the right to:

- Shut down the event early and accept or void any and all bids from each participant.
- Change the strategy of the IN event to have a 10 minutes blind bid at the end of events.

Let me know if you have any questions. Please confirm acceptance of this IN by email and provide your contact number for the events.

Regards,

Alex WU | RMSD GCM | DELL WWP Singapore | Office: +65 6823 6154 | Mobile: +65 9145 0160 | Fax: +65 6829 1154 |
E-mail: alex_wu@ dell.com

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Author	Chng, Vincent <Vincent.Chng@ap.sony.com>	ORIGINAL
Company	Quanta	ORIGINAL
Custodian	Chen, Haw	ORIGINAL
Docdate	08/25/2008 20:47:16 -0700	ORIGINAL
Docid	QUANTA_HAW_00025559	ORIGINAL
DocType	Message	ORIGINAL
Filepath	haw0808/0808//2268	ORIGINAL
FolderID	haw0808	ORIGINAL
From	Vincent.Chng@ap.sony.com	ORIGINAL
GuessedCharset	UTF-8	ORIGINAL
Hash	f78749f12db0dd1714d88b8fe39b31e1	ORIGINAL
Lang	English	ORIGINAL
Pgcount	6	ORIGINAL
Subject	RE: RMSD Internet Negotiation Announcement - Slim DVDRW, Q4FY09 Nov & Dec, 8/25 & 8/26 IN Days - Supplier Notice of IN Details	ORIGINAL
To	'Sato, Tomio' <Tomio.Sato@jp.sony-nec-optiarc.com>, 'Junsuke.Mikami@jp.sony-nec-optiarc.com' <Junsuke.Mikami@jp.sony-nec-optiarc.com>, Amino, Masafumi (Optiarc) <masafumi.amino@jp.sony-nec-optiarc.com>, 'haw.chen@qsitw.com' <haw.chen@qsitw.com>, 'Shu-ming.Tzeng@qsitw.com' <Shu-ming.Tzeng@qsitw.com>	ORIGINAL

EXHIBIT 48

From: Shu-ming.Tzeng 曾淑明
Sent: 2/10/2009 8:41:22 AM
To: 'Chng, Vincent' [Vincent.Chng@ap.sony.com]
CC: haw.chen 陳尚昊 [haw.chen@qsitw.com]; Mikami, Junsuke (Optiarc) [Junsuke.Mikami@jp.sony.com]; Amino, Masafumi (Optiarc) [Masafumi.Amino@jp.sony.com]
Subject: RE: Blind Bids - April FY10 for 12.7 SATA Tray & Slot DVDRW TAM - Due on 5PM Thursday Feb 12

Hello Vincent,

Thanks for your information!

We'll study the costs again & get back to you then. Thanks!

Regards,

Shu-ming

From: Chng, Vincent [mailto:Vincent.Chng@ap.sony.com]
Sent: Tuesday, February 10, 2009 3:43 PM
To: Shu-ming.Tzeng 曾淑明
Cc: haw.chen 陳尚昊; Mikami, Junsuke (Optiarc); Amino, Masafumi (Optiarc)
Subject: FW: Blind Bids - April FY10 for 12.7 SATA Tray & Slot DVDRW TAM - Due on 5PM Thursday Feb 12

Hi Shu-ming,

Please note that Alex have decided to hold a Blind Bid event for April 09 TAM. (Please see below email)

The date-line for the submission is by 5pm on Feb 12th 2009.

The following is our previous proposal to Alex:

- | | | |
|----|------------------------|---------------------------------------|
| 1. | 12.7mm Tray SATA DVDRW | Apr 09 - USD23.10 (Mar 09 - USD23.60) |
| 2. | 12.7mm Slot SATA DVDRW | Apr 09 - USD28.46 (Mar 09 - USD28.96) |

Alex's comment on the above is that some suppliers have already reach his price idea of USD23.00 for 12.7 Tray SATA DVDRW and USD28.00 for Slot SATA DVDRW during the 1st round of submission.

FYI, H company has informed me that their management has given him a very aggressive target and is targeting a minimum of 30% Share (No.2 position). Based on this, I believe that the bid from other supplier will be quite aggressive.

Let me know if you have any questions.

Thanks & Rgds,
Vincent Chng

From: Alex_Wu@dell.com [mailto:Alex_Wu@dell.com]
Sent: Tuesday, February 10, 2009 3:17 PM



To: Alex_Wu@dell.com

Cc: Tong_Leong_Chan@dell.com; Ricky_Sim@dell.com

Subject: Blind Bids - April FY10 for 12.7 SATA Tray & Slot DVDRW TAM - Due on 5PM Thursday Feb 12

Dear All RMSD Supplier Account Managers,

This is to invite you to join the Blind Bid on the below 2 drives for **April FY10 TAM**, the bid & ranking will be based upon Bare Drive prices:

1. 12.7mm SATA Tray DVDRW

2. 12.7mm SATA Slot DVDRW

As a nominated TAM allocation in principle, the following share will apply:

#1 = 40% TAM

#2 = 30% TAM

#3 = 15% TAM

#4 = No guarantee

The last 15% in open allocation @ GCM discretion.

No further bare drive price updates will be accepted after the Blind Bid, the last 15% is for negotiations on any other forms of incentives/benefits in return to Dell.

Please seal & send your bids of the April price no later than 5PM, Thursday, Feb 12th.

Thanks in advance.

Best Regards

Alex WU | RMSD GCM | DELL WWP Singapore | Office: +65 6823 6154 | Mobile: +65 9145 0160 | Fax: +65 6829 1154 | E-mail: alex_wu@dell.com

This email is confidential and intended only for the use of the individual or entity named above and may contain information that is privileged. If you are not the intended recipient, you are notified that any dissemination, distribution or copying of this email is strictly prohibited. If you have received this email in error, please notify us immediately by return email or telephone and destroy the original message. - This mail is sent via Sony Asia Pacific Mail Gateway..

Q261745**Metadata**

Date Received	02/10/2009 00:00:00	ORIGINAL
Date Sent	02/10/2009 00:00:00	ORIGINAL
Document Extension	msg	ORIGINAL
Email CC Text	haw.chen <haw.chen@qsitw.com>; Mikami, Junsuke (Optiarc) <Junsuke.Mikami@jp.sony.com>; Amino, Masafumi (Optiarc) <Masafumi.Amino@jp.sony.com>	ORIGINAL
Email From Text	Shu-ming Tzeng	ORIGINAL
Email Subject	RE: Blind Bids - April FY10 for 12.7 SATA Tray & Slot DVDRW TAM - Due on 5PM Thursday Feb 12	ORIGINAL
Email TO Text	'Chng, Vincent' <Vincent.Chng@ap.sony.com>	ORIGINAL
Extracted Text	.\\Q012\\TEXT\\TEXT024\\Q000261745.txt	ORIGINAL
File Name	RE: Blind Bids - April FY10 for 12.7 SATA Tray & Slot DVDRW TAM - Due on 5PM Thursday Feb 12.msg	ORIGINAL
File Size	44544.00	ORIGINAL
MD5 Hash	86464BFC4AD2FAFD9AA2EBC8E3F3DE1A	ORIGINAL
OriginalDocID	Q000261745	ORIGINAL

EXHIBIT 49

Subject: Talking about Q2/Q3 price of Slot load PATA.
Date: Thu, 3 Jul 2008 11:56:26 +0800
Thread-Topic: Talking about Q2/Q3 price of Slot load PATA.
From: Shu-ming.Tzeng <Shu-ming.Tzeng@qsitw.com>
To: haw.chen (Chen Shang Haw) <haw.chen@qsitw.com>
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
NC./OU=QMATEMAIL/CN=RECIPIENTS/CN=SHU-MING.TZENG

It looks like for SLOT PATA Q2 bare drive, there's a \$2.86 difference between our price and TEAC's. Pana is the most expensive.

Alex said his superior (Hon Man) talked with T & P about price reduction, but TEAC ignored Dell.

I don't know if PANA will agree to reduce \$2 or so. It's probably not a big threat to us.

VC says (10:39 am):

Shu-ming

Shu-ming... says (10:39 am):

yes...

VC says (10:39 am):

yesterday I met with Teac Acct manager

VC says (10:40 am):

found out that their price for Slot PATA DVDRW (Q2) is \$38.26

Shu-ming... says (10:40 am):

Do you have any gossip?

VC says (10:40 am):

very high compared to us

VC says (10:40 am):

he said Alex also give him pressure to reduce price

VC says (10:41 am):

but they rejected.

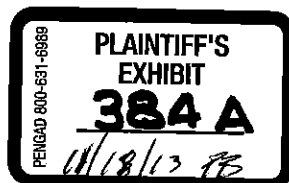
Shu-ming... says (10:41 am):

yes...he lied again!

VC says (10:41 am):

however, their concern now is Hon Man is talking to Panasonic to get good price for more tam

VC says (10:42 am):



they are worried if Panasonic reduce price, their tam may drop to 10%

VC says (10:42 am):

he told me that he was told the TAM share as follows:

VC says (10:42 am):

Optiac 70%, Teac 20% Pana 10%

VC says (10:43 am):

he also told me now the best business is Tray Combo and DVDROM

VC says (10:43 am):

their Tray PATA combo is \$20.98

VC says (10:43 am):

their Native DVDROM is \$20.00

VC says (10:43 am):

he said that he only drop \$0.10 to get a good TAM in Q3 as Optiarc/QSI will EOL drive

Shu-ming... says (10:44 am):

hmm...

Shu-ming... says (10:45 am):

but our price is fixed at 21.23...

Shu-ming... says (10:45 am):

I mean Combo.

Shu-ming... says (10:46 am):

but I don't think PANA will reduce the price too much!

Shu-ming... says (10:47 am):

or the price war will start soon..

Shu-ming... says (10:47 am):

Especially for the two crazy companies..

Shu-ming... says (10:48 am):

Korean style

Shu-ming... says (10:48 am):

by the way, what about the price of Beyonce?

Shu-ming... says (10:49 am):

How much price did you load in GPA?

Shu-ming... says (10:50 am):

USD36 24 with cost adder USD2.00?

VC says (10:52 am):

\$2.00

VC says (10:53 am):

but actually Alex have not given his approval for this

VC says (10:53 am):

he still wants us to talk to Huanshin directly.

Shu-ming... says (10:58 am):

it's no way..

Shu-ming... says (10:58 am):

as you heard the conversation between Amy & Alex.

Shu-ming... says (10:58 am):

we're still pushing Huanshin to provide us more brackets..

Shu-ming... says (10:59 am):

and Alex said that he has sent out many emails to Huanshin.

Quanta Storage Inc.

Shu-ming. Tzeng

Sales & Marketing Div.

Tel:886-3-3288090 ext.1108

Fax:886-3-3277500

E-mail: shu-ming.tzeng@qsiw.com

Address: 4F NO.188,

Wen Hua 2nd Rd.

Kuei Shen Hsiang,

Tao Yuan Shian, Taiwan

CERTIFICATE OF TRANSLATION ACCURACY

State of California
October 22, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00014855, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 50

Subject: PLDS has 110K HH BD combo inventory/HLDS has 60K...
Date: Fri, 24 Oct 2008 11:44:44 +0800
Thread-Topic: PLDS has 110K HH BD combo inventory/HLDS has 60K...
From: Shu-ming.Tzeng Shu-ming <Shu-ming.Tzeng@qsitw.com>
To: haw.chen Chen Shang-Hao <haw.chen@qsitw.com>
X-libpst-forensic-sender: /O=QMATE TECHNOLOGY
NC./OU=QMATEMAIL/CN=RECIPIENTS/CN=SHU-MING.TZENG

Shu-ming says (10:21):

Hello Vincet..

Shu-ming says (10:21):

Is the IN to be held on Oct/30, just one day?

Shu-ming says (10:21):

can you confirm this?

VC says (11:36):

yes. it should be

VC says (11:36):

anyway, let me confirm with Alex

VC says (11:36):

i am currently trying to check price of other supplier

Shu-ming says (11:36):

okay.

Shu-ming says (11:36):

we had lunch with PLDS team.

VC says (11:36):

really?

Shu-ming says (11:37):

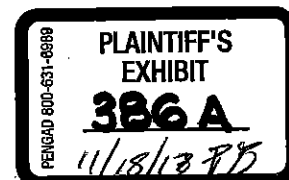
they said they have no intention to lower than RFQ price.

VC says (11:37):

did they tell u about their 110k inventory for HH BD Combo?

Shu-ming says (11:37):

Shu-ming says (11:37):



who? PLDS has 110K inventory?

VC says (11:38):

yes

VC says (11:38):

they are 2nd source

VC says (11:38):

initially Tong Leong told them forecast is 150k/m

VC says (11:38):

but now reduce to 3k/m

Shu-ming says (11:38):

too ridiculous.

Shu-ming says (11:38):

my god..

VC says (11:38):

PLDS tried cutting the material but still have 110k

Shu-ming says (11:38):

it looks Dell's going dead..

VC says (11:39):

HLDS is 1st source but they still have about 60k inventory

VC says (11:40):

did PLDS share with you their RFQ price?

VC says (11:40):

last i heard is \$30.5 to \$31

Shu-ming says (11:42):

my god...it's very low...

Shu-ming says (11:42):

ours is 31.69...

Quanta Storage Inc.

Shu-ming Tzeng

Sales & Marketing Div.

Tel:886-3-3283090 ext.1108

Fax:886-3-3277500

E-mail: shu-ning.tzeng@qsitw.com

Address: 4F NO.188,
Wen Hua 2nd Rd.
Kuei Shen Hsiang,
Tao Yuan Shien, Taiwan

CERTIFICATE OF TRANSLATION ACCURACY

State of California
October 22, 2013
Country of USA

I, the undersigned, Winifred Chang, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for *In re Optical Disk Drive Products Antitrust Litigation*, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have 8 years of experience working as a Chinese to English translator and my qualifications include a Ph.D. degree in Chinese history from University of California, Los Angeles. I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QUANTA_HAW_00037186, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 22, 2013 in Astoria, New York.



Winifred Chang

EXHIBIT 51

From: Sally.huang 黃雅平 <Sally.huang@qsitw.com>
 Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream
 To: caroline.lin 林初慈
 Cc: haw.chen 陳尚昊
 Date: Wed, 22 Oct 2008 03:09:20 +0000

Why not Rank#2?

還有你的數字是不是有問題?

, USD24.50*200Kpcs+29.4M=34.3M>34.09M.

34.09M?????

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell:+886-955707205

From: Caroline.Lin 林初慈 [mailto:caroline.lin@qsitw.com]
 Sent: Wednesday, October 22, 2008 10:53 AM
 To: haw.chen 陳尚昊; Sally.huang 黃雅平
 Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream
 Importance: High

Hi, Haw and Sally,

After meeting w/Edward today, we're currently ranked as No.4 with the proposal of USD24.70.

However, He'd suggest us beat USD24.50 to gain the best share (Rank#3, 28~30% share) & maintain the price as well.

As we can see in the chart bellowed:

When we're ranked as #3, we possibly will get more sales with any upsides of 200k (5% share).
 USD24.50*200Kpcs+29.4M=34.3M>34.09M.

Tam of 1C09 (M)	Rank	Proposed Price	Possible Share	Possible Qty	Est. Sales
4.0	Current #4	24.70	5%	0.2	4.94
	#3	24.50	30%	1.2	29.40
	#1.2	24.35	35%	1.4	34.09

According to Edward, there is only 3% difference in terms of share till' now between us and Rank#2. And the share difference between Top 3 suppliers can be very small, which is less than 5%.

Therefore, I'd suggest providing USD24.50 tomorrow. Pls kindly advise!?

P&L Analysis

Model	SDW-087Y	SDW-087H	SDW-088X	SDW-088H
Quot. Month	Q408'	Q408'	Q408'	Q408'
Remark	mPC	mPC	mPC	mPC
Proposed Quotation	24.50	24.50	24.50	24.50
MVA	20.32	21.35	20.52	21.26
BOM Cost	21.08	22.17	20.49	21.73
MFG	1.10	1.10	1.10	1.10
Royalty	1.13	1.13	1.13	1.13

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PLAINTIFF'S
EXHIBIT

392

11/18/13 RB

RMA	0.25	0.25	0.25	0.25
Shipping	0.10	0.10	0.10	0.10
GP (MVA)	1.61	0.58	1.41	0.67
P & L (MVA)	6.56%	2.36%	5.75%	2.73%
GP (BOM Cost)	0.85	-0.24	1.44	0.20
P & L (BOM Cost)	3.46%	-0.99%	5.87%	0.81%

Furthermore, Edward would like to ask "Shouldn't QSI's price be more flexible, since we have more advantages of logistic & key component cost to compare w/other suppliers?"

Would you pls kindly also advise on this?

Thanks & Best Regards,

Caroline Lin 林初慈
Quanta Storage Inc. | OSBU Sales
Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile: 886-(0)963-092971

E-mail: Caroline.Lin@qsitw.com

From: Caroline.Lin 林初慈 [mailto:caroline.lin@qsitw.com]
Sent: Monday, October 20, 2008 11:11 PM
To: 'haw.chen 陳尚昊'; 'Sally.huang 黃雅平'
Subject: RE: 1C09 RFQ - 12.7 DVD RW SATA (LS & non-LS) Mainstream
Importance: High

Dear Haw & Sally,

After discussing w/Edward during lunch today, I heard the price projection for 1C09 from suppliers till now is between USD24.40~24.70. And I've slightly informed him of our price USD24.70 and also expressed our enthusiastic target to win over **Rank #2: 31 - 35%**. However, he promised to help us achieve the target share by having further discussion w/us after all suppliers' proposals are collected tomorrow.

Therefore, belollowed is my proposal for this RFQ:

- n Today I will hand in the 1st round price : **USD24.70** ;
- n If there is further request from HP to fight for our share in mind, Pls be informed of the possibility that a better price is needed for 2nd round. (**no lower than USD24.60**)

Pls also see the attachment for the P&L detail.

If there is any further update, I'll keep you both informed.

Thanks & Best Regards,

Caroline Lin 林初慈
Quanta Storage Inc. | OSBU Sales
Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile: 886-(0)963-092971

E-mail: Caroline.Lin@qsitw.com

From: Sally.huang 黃雅平 [mailto:Sally.huang@qsitw.com]

Sent: Monday, October 20, 2008 8:20 PM
To: caroline.lin 林初慈
Cc: haw.chen 陳尚昊
Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Dear Caroline:

I revised the MVA for DVDRW/COMBO models, please use this version to do P/L analysis for 1C09 RFQ.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell:+886-955707205

From: haw [mailto:haw.chen@qsiw.com]
Sent: Tuesday, October 21, 2008 8:49 AM
To: caroline.lin 林初慈; Sally.huang 黃雅平
Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Dear Caroline,

Please don't give the price less than 24.70, the actual MVA is as below. We get some more room.

Thanks,

Haw

Model	SDW-087	SDW-087L	SDW-087I	SDW-087H	SDW-088I	SDW-088H
Quot. Month	Q408'	Q408'	Q408'	Q408'	Q408'	Q408'
Remark	mPC	mPC	mPC	mPC	mPC	mPC
Proposed Quotation	25.74	25.74	24.70	24.70	24.70	24.70
MVA	22.06	22.99	21.79	22.79	22.12	23.99

BU別	客戶分群一	機種分群二	@材料
ODD	TOP	SBW246	17.86
ODD	TOP	SBW246I	17.91
ODD	TOP	SDR08C	17.64
ODD	TOP	SDR08CI	18.05
ODD	TOP	SDW086K	21.96
ODD	TOP	SDW087	20.75
ODD	TOP	SDW087H	21.35
ODD	TOP	SDW087I	20.32

ODD	TOP	SDW087L	21.99
ODD	TOP	SDW088H	21.26
ODD	TOP	SDW088I	20.52
ODD	TOP	SDW088L	21.73
ODD	TOP	TDW081I	25.26

-----Original Message-----

From: Caroline Lin 林初慈 [mailto:caroline.lin@qsitw.com]
 Sent: Tuesday, October 21, 2008 12:11 AM
 To: Sally.huang 黄雅平
 Cc: haw.chen 陳尚昊
 Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream
 Importance: High

Dear Sally,

I've sent out the P&L analysis for USD24.70 & USD24.60

Pls see the detail in the attachment. There will be more discussion at the meeting today with Top team.

Thanks & Best Regards,

.....

 Caroline Lin 林初慈

Quanta Storage Inc. | OSBU Sales

Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile:

886-(0)963-092971

E-mail: Caroline.Lin@qsitw.com

-----Original Message-----

From: Sally.huang 黄雅平 [mailto:Sally.huang@qsitw.com]
 Sent: Monday, October 20, 2008 3:42 AM
 To: caroline.lin 林初慈
 Cc: haw.chen 陳尚昊
 Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream
 Importance: High

Dear Caroline:

I already explained what we talked to Haw and please send

out P/L analysis for 24.7 /24.75. Haw and I will give you conclusion our tomorrow morning (your Monday night for you to send out on Tues.) When you have lunch with Edward, you can give him some hint and try to get other suppliers' info. Thanks.

Sally Huang

Quanta Storage Inc.

OS BU, Sales Division

TW office: +886-33288090 ext.1995

Cell: +886-955707205

-----Original Message-----

From: Caroline.Lin 林初慈 [mailto:caroline.lin@qsitw.com]

Sent: Monday, October 20, 2008 1:35 AM

To: Sally.huang 黃雅平

Cc: haw.chen 陳尚昊

Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Importance: High

Hi, Sally & Haw...

Edward's 1C price expectation is around USD24.5, I think TSST will definitely hit the goal.

Try to be no lower than our goal USD24.6 and reach our target as Rank#2, I think we might provide the price between 24.70~24.80 as the start and reply the best price USD24.60 when a further price reduction is requested by HP.

Last week, I met HLDS guy. According to what he said, their best price is around 24.65 eventually. However, they won't go that far in the 1st round as well and might provide a higher price to see HP's feedback & then react.

Pls kindly advise on this.

Thanks & Best Regards,

.....

.....
Caroline Lin 林初慈

Quanta Storage Inc. | OSBU Sales

Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile:

886-(0)963-092971

E-mail: Caroline.Lin@qsltw.com
.....
.....

-----Original Message-----

From: Caroline.Lin 林初慈 [mailto:caroline.lin@qsltw.com]

Sent: Friday, October 17, 2008 10:18 AM

To: 'Sally.huang 黃雅平'

Cc: 'haw.chen 陳尚昊'

Subject: FW: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Importance: High

Dear Sally & Haw,

Here is the Mainstream 12.7 DVDRW non-LightScribe and LightScribe SATA
optical disk drive requirements for 1C09.

Following are the RFQ details -

1) Estimated 1C09 mainstream volume: 4.0M

Please note that volumes are subject to change and that HP is not committing
to volumes.

2) TAM % Share Award (based on best pricing) :

Rank #1: 36 - 40%

Rank #2: 31 - 35%

Rank #3: 25 - 30%

Rank #4: 5 - 10%

Our price shall be handed in by 8:00AM on Tuesday, October 21, 2008 (Houston
time).

Pls see the attachment for the further detail.

Thanks & Best Regards,
.....
.....

Caroline Lin 林初慈

Quanta Storage Inc. | OSBU Sales

Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile:

886-(0)963-092971

E-mail: Caroline.Lin@qsltw.com

.....
.....

-----Original Message-----

From: Yambao, Edward [mailto:Edward.Yambao@hp.com]

Sent: Friday, October 17, 2008 6:21 AM

To: Caroline.Lin 林初慈

Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Hi Caroline,

You might need to convert the word document since we are now using Office 2007.

Regards,

Edward

-----Original Message-----

From: Caroline.Lin 林初慈 [mailto:caroline.lin@qsltw.com]

Sent: Thursday, October 16, 2008 11:12 PM

To: Yambao, Edward

Subject: RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Importance: High

Dear Edward,

Would you pls send me the file again coz I haven't see any attachment in your previous mail. Sorry for the inconvenience.

Thanks & Best Regards,

.....
.....

Caroline Lin 林初慈

Quanta Storage Inc. | OSBU Sales

Tel(USA): 1-832-661-1496

Tel(TW): 886-(0)3-3288090 ext.1122, Fax: 886-(0)3-3277500, Mobile:

886-(0)963-092971

E-mail: Caroline.Lin@qsitw.com

-----Original Message-----

From: Yambao, Edward [mailto:Edward.Yambao@hp.com]

Sent: Thursday, October 16, 2008 7:14 PM

Subject: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Received: from mailgw.qsitw.com ([10.1.1.82]) by svrmail.qsinc.com.tw with
Microsoft SMTPSVC(6.0.3790.211);

Fri, 17 Oct 2008 08:14:49 +0800

X-Spam-Checker-Version: SpamAssassin 3.1.8 (2007-02-13) on mailgw.qsitw.com

X-Spam-Status: score=0.0 required=6.0

X-Spam-Report:

0.0 UNPARSEABLE_RELAY Informational: message has unparseable relay
lines

Received: from g5t0009.atlanta.hp.com ([15.192.0.46]) by mailgw.qsitw.com

(envelope-from <edward.yambao@hp.com>)

(Cellopoint E-mail Firewall v3.9.2 Build 0715 with TLS)

with ESMTP id 2015346392; Fri, 17 Oct 2008 08:14:34 +0800

Received: from G3W0630.americas.hpqcorp.net (g3w0630.americas.hpqcorp.net
[16.233.58.74])

(using TLSv1 with cipher RC4-MD5 (128/128 bits))

(No client certificate requested)

by g5t0009.atlanta.hp.com (Postfix) with ESMTPS id 931B23003A;

Fri, 17 Oct 2008 00:14:40 +0000 (UTC)

Received: from G5W0325.americas.hpqcorp.net (16.228.8.67) by

G3W0630.americas.hpqcorp.net (16.233.58.74) with Microsoft SMTP Server
(TLS)

id 8.1.263.0; Fri, 17 Oct 2008 00:13:44 +0000

Received: from GVW0547EXC.americas.hpqcorp.net ([16.228.8.53]) by

G5W0325.americas.hpqcorp.net ([16.228.8.67]) with mapi; Fri, 17 Oct 2008
00:13:43 +0000

From: "Yambao, Edward" <Edward.Yambao@hp.com>

Date: Fri, 17 Oct 2008 00:14:23 +0000

Subject: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Thread-Topic: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream

Thread-Index: Ackv7U6gvSvtDiGQi5d5aeIN3aQXw==

Message-ID:

<72AE9D04FE9DD4498133C97A3366DAA745C9BC9976@GVW0547EXC.americas.

hpqcorp.net>

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Content-Language: en-US

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X-MS-TNEF-Correlator:

acceptlanguage: en-US

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MIME-Version: 1.0

To: Undisclosed recipients,;

Return-Path: edward.yambao@hp.com

X-OriginalArrivalTime: 17 Oct 2008 00:14:49.0119 (UTC)

FILETIME=[5E370AF0:01C92FED]

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Content-Type: text/plain; charset="us-ascii"

Content-Transfer-Encoding: quoted-printable

Please see attached 1C09 RFQ package for mainstream 12.7 DVDRW SATA.

Regards,

Edward Yambao, CPIM, C.P.M.

Procurement Commodity Manager

Notebook GBU Supply Chain

Hewlett-Packard Co.

ph: (281) 518-9659

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Content-Disposition: attachment; filename="RFQ letter.doc"; size=56832;

creation-date="Thu, 16 Oct 2008 00:03:29 GMT";

modification-date="Fri, 17 Oct 2008 00:14:22 GMT"

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QUANTA_HAW205291**Metadata**

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Author	Sally.huang <Sally.huang@qsitw.com>	ORIGINAL
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Company	Quanta	ORIGINAL
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Pgcount	35	ORIGINAL
Source	Quanta	ORIGINAL
Subject	RE: 1C09 RFQ - 12.7 DVDRW SATA (LS & non-LS) Mainstream	ORIGINAL
To	caroline.lin	ORIGINAL

EXHIBIT 52

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Page 422

1 UNITED STATES DISTRICT COURT
2 NORTHERN DISTRICT OF CALIFORNIA
3 SAN FRANCISCO DIVISION
4

5 IN RE OPTICAL DISK DRIVE PRODUCTS)
ANTITRUST LITIGATION,)
6) No. 3:10-md-2143 RS
7)
8)
9)
10)
11)

12 ** HIGHLY CONFIDENTIAL **

13 DEPOSITION OF WOO JIN (EUGENE) YANG

14 VOLUME IV

15 San Francisco, California

16 Wednesday, July 24, 2013
17
18
19
20
21
22

23 Reported By:

24 LINDA VACCAREZZA, RPR, CLR, CRP, CSR. NO. 10201

25 JOB NO. 62881

1 first is, this appears to be an e-mail, at least the
2 top of the document reflects an e-mail sent by you on
3 May 7, 2008, correct?

4 A. Please allow me to take a brief look at this
5 document.

6 (Document review.)

7 I just looked at the top page of this
8 document. That document says yes, it is correct that
9 "from" person is indicated as myself and "to" persons
10 are indicated here as Daniel Hur and SH Kim. And a
11 few others are CC.

12 Q. Thank you. Mr. Yang, isn't it true that you
13 knew an individual by the name of Caroline Lin, L-I-N,
14 who worked for Quanta Storage, Inc.?

15 MS. PALMER: Objection. Form.

16 MR. KIM: objection. Form.

17 THE WITNESS: I know of someone whose first
18 name is Caroline, although I am not sure whether her
19 last name is Lin, who worked in Houston as part of
20 QSI.

21 BY MR. FRIEDMAN:

22 Q. You met with her on one or more occasions to
23 discuss prices in connection with HP procurement
24 events, correct?

25 MS. PALMER: Objection to form.

1 MR. KIM: Objection. Form, foundation.

2 THE WITNESS: I recall having met with
3 Caroline and discussed things related to prices,
4 although I don't recall how many times it was.

5 MR. FRIEDMAN: On at least one of the
6 occasions, you had dinner with her, correct?

7 MS. PALMER: Objection. Form.

8 THE WITNESS: I recall having eaten something
9 together, although my memory doesn't serve me whether
10 it was a meal or just tea.

11 BY MR. FRIEDMAN:

12 Q. Are you familiar with an individual by the
13 name of Steve Jaska who worked for Sony Optiarc?

14 MS. WONG: Object to form.

15 THE WITNESS: I recall hearing just once the
16 name of Steve who was affiliated with Sony Optiarc.
17 Optiarc. I recall having heard just once the name of
18 Steve who was affiliated with Sony Optiarc.

19 BY MR. FRIEDMAN:

20 Q. Do you recall the context you heard the name
21 Steve who was affiliated with Sony Optiarc?

22 MR. KIM: Objection. Form.

23 THE WITNESS: I don't recall the specifics.
24 I don't know how I came to know that, but I recall
25 that that person worked at Sony.

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C E R T I F I C A T E

STATE OF CALIFORNIA)

)

COUNTY OF SAN FRANCISCO)

I, LINDA VACCAREZZA, a Certified Shorthand
Reporter for the State of California, do hereby
certify:

That WOO JIN (EUGENE) YANG, the witness whose
deposition is hereinbefore set forth, was duly sworn
by me and that such deposition is a true record of the
testimony given by such witness.

I further certify that I am not related to any of
the parties to this action by blood or marriage; and
that I am in no way interested in the outcome of this
matter.

IN WITNESS WHEREOF, I have hereunto set my hand
this 31st day of July 2013.


LINDA VACCAREZZA, CSR. NO. 10201

EXHIBIT 53
REDACTED VERSION

From: haw
To: Sally.huang Huang Ya Ping
CC: 'Shu-ming.Tzeng Tzeng Shu-ming
Sent: 1/13/2009 7:23:34 AM
Subject: RE: Price update for Feb biz.

[REDACTED]

I can understand the pressure from HLDS. MTK told me TSST is going to consume their inventory in Jan end. But it seems HLDS still has inventory on hand.

[REDACTED]

[REDACTED]

From: Sally.huang Huang Ya Ping [mailto:Sally.huang@qsitw.com]
Sent: Tuesday, January 13, 2009 5:45 PM
To: haw.chen Chen Shang-Hao
Cc: Shu-ming.Tzeng Tzeng Shu-ming
Subject: RE: Price update for Feb biz.

Dear Haw:

HLDS tried to get rid of their high inventory so they are quite aggressive in quotation even for TWR ODM. We only can try to secure the price for 086K/TDW-081 but we might need to minimize the gap with HLDS in 087/087I to secure our position in COM. Your comment is highly appreciated.

Sally Huang
Quanta Storage Inc.
OS BU, Sales Division
TW office: +886-33288090 ext.1995
Cell:+886-955707205

From: Shu-ming.Tzeng Tzeng Shu-ming
Sent: Tuesday, January 13, 2009 5:11 PM
To: Sally.huang Huang Ya-ping
Cc: haw.chen Chen Shang-Hao
Subject: Price update for Feb biz.

Hello Sally,

The most recent HLDS reported price is total exaggeration, which is consistently causing harm to our reported price.

RW USD24.XX

Slot USD31.XX

Chloe also noted that our price is very nauseating (I do not know whether she learned this from the other side)

It looks like in the end we may have to follow by lowering our price a little...

In order to make the 20K tail amount for 086K (including the forecasted return of 3K+ of CLV) and to press acceptance of COM.

I want to report USD24.80 for COM (1% incentive is still valid).



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QSI-SUB 1386856PCT

As for 087/087I/088/088I, I plan to report USD25.00 (1% incentive is still valid).
 As for SLOT LOAD, I would like to "play dead" (i.e., strategize) or KEEF USD36.00
 Take a look to see if there are any problems.

	Dec'08	Jan'09	Feb'09
	COM	COM	COM
2. SDW-086K			
BOM	21.7	21.7	21.7
Manufacturing cost	1.06	1.06	1.06
Royalty	1.197242	1.2558	1.2558
Warranty	0.390405	0.378525	0.36828
COG	24.34765	24.39433	24.38408
Shipping Cost (sea or land)	0.063	0.063	0.063
Sales Price(real price)	26.027	25.235	24.552
Gross Margin	1.62	0.78	0.10
Gross Margin %	6.21%	3.08%	0.43%

	Dec'08	Jan'09	Feb'09
	COM	COM	COM
3. SDW-087			
BOM	21.41	21.38	21.38
Manufacturing cost	1.06	1.06	1.06
Royalty	1.20681	1.1385	1.1385
Warranty	0.393525	0.37125	0.37125
COG	24.07034	23.94975	23.94975
Shipping Cost (sea or land)	0.063	0.063	0.063
Sales Price(real price)	26.235	24.75	24.75
Gross Margin	2.10	0.74	0.74
Gross Margin %	8.01%	2.98%	2.98%

	Dec'08	Jan'09	Feb'09
	COM	COM	COM
4. SDW-087I			
BOM	21.08	21.05	21.05
Manufacturing cost	1.06	1.06	1.06
Royalty	1.20681	1.1385	1.1385
Warranty	0.393525	0.37125	0.37125
COG	23.74034	23.61975	23.61975
Shipping Cost (sea or land)	0.063	0.063	0.063
Sales Price(real price)	26.235	24.75	24.75
Gross Margin	2.43	1.07	1.07
Gross Margin %	9.27%	4.31%	4.31%

	Dec'08	Jan'09	Feb'09
	COM	COM	COM
5. TDW081			
BOM	25.85	24.74	24.74
Manufacturing cost	1.5	1.5	1.5
Royalty	1.748	1.63944	1.63944
Warranty	0.57	0.5346	0.5346
COG	29.668	28.41404	28.41404

Shipping Cost (sea or land)	0.063	0.063	0.063
Sales Price(real price)	38	35.64	35.64
Gross Margin	8.27	7.16	7.16
Gross Margin %	21.76%	20.10%	20.10%

	Jan'09	Feb'09
6. TDW08II	COM	COM
BOM	24.97	24.97
Manufacturing cost	1.5	1.5
Royalty	1.63944	1.63944
Warranty	0.5346	0.5346
COG	28.64404	28.64404
Shipping Cost (sea or land)	0.063	0.063
Sales Price(real price)	35.64	35.64
Gross Margin	6.93	6.93
Gross Margin %	19.45%	19.45%

Quanta Storage Inc.

Shu-ming Tzeng

Sales & Marketing Dir.

Tel:886-3-3283000 ext.1103

Fax:886-3-3277500

E-mail: shu-ming.tzeng@qsiw.com

Address: 4F, No.101, Wen Hsu 2nd Rd., Fong Shan Hsiang,
Tao Yuan Hsien, Taiwan

CERTIFICATE OF TRANSLATION ACCURACY

State of California
November 11, 2013
Country of USA

I, the undersigned, Michael Fowler, hereby certify:

I am a professional translator. I work as an independent contractor. I was contracted by Divergent Language Solutions, LLC to provide document translation for In re Optical Disk Drive Products Antitrust Litigation, Case No. 3:10-md-2143 RS (N.D. Cal.).

I have a BA in Chinese Language and an MA in International Relations (Japan-China focus). I am familiar and competent with both the Chinese and English languages. I have received and translated from Chinese into English QSI-SUB_1386856 -- QSI-SUB_1386858, and hereby attest that the English translation is a faithful and accurate rendition of the Chinese original.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 28, 2013 in Bremerton, WA.

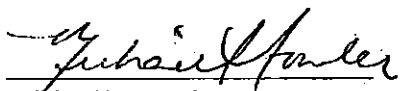

Michael A. Fowler

EXHIBIT 54

From: <MAILER-DAEMON>
Subject: RE: Augut Price to Lenovo
To: gina.liu 劉佳芳; Sally.huang 黃雅平

I can imagine if GCM Charles is holding the power, our share will be getting normal low.

Good news is Charles is crazy for you, Frank is crazy for you

From: gina.liu 劉佳芳
Sent: Tuesday, July 29, 2008 10:42 AM
To: haw.chen 陳尚昊; Sally.huang 黃雅平
Subject: RE: Augut Price to Lenovo

Dear Haw:

1. As I know Charles is the one upload LC price into their system, and I've spoken to him yesterday that I will provide him Aug price by this week. Charles has no concern about it.
2. I think Gejing still controls LC allocation and he reports to Wentao Yang directly. (Few weeks ago, Gejing called me to inform me that he is going to raise QSI Jul share and indeed, VOL Jul pull is pretty good).

By the way, I am preparing Aug price and I will still discuss with Gejing.

Best regards,

Gina Liu

Quanta Storage Inc.

Sales & Marketing Division

Tel TW: 886-(0)3-3288090 ext.1117

Cell TW: 886-(0)989549608

Tel CN: +86-37748068 ext.68119

Cell CN: 86-1376-160-2698

From: haw.chen 陳尚昊



Sent: Tuesday, July 29, 2008 10:28 AM
To: Sally.huang 黃雅平; gina.liu 劉佳芳
Subject: RE: Augut Price to Lenovo

What do you think about her concern?

From: Yamada, Tomomi [mailto:Tomomi.Yamada@jp.sonyec-optiarc.com]
Sent: Tuesday, July 29, 2008 9:37 AM
To: Sally.huang 黃雅平; gina.liu 劉佳芳
Cc: haw.chen 陳尚昊; Amino, Masafumi
Subject: RE: Augut Price to Lenovo

Dear Sally and Gina,

I know you are working with Lenovo Shanghai for the August pricing. However, is it possible for you to give us the price by today? Lenovo Yamato GCM Mr. Sannohmaru strongly asked me he needs price today. He needs upload the August pricing into their system by today.

Also he reported to Edward and Charles that supplier should not discuss pricing with Lenovo Shanghai directly. As we know, LC Notebook ODD GCM is Charles not Lenovo Shanghai and Charles is the one who has an authority to do the price negotiation and decide share allocation. I do not know exactly but maybe somebody (other ODD supplier?) complained Lenovo Shanghai Buyer has been deciding the share by himself, not GCM.... (and giving favor to Optiarc/QSI drive??).

Anyway, we have to be careful of treating GCM team. Sannohmaru-san mentioned if Lenovo Shanghai buyer behavior will continue, he even escalate to Wentao Yang..

Sorry to rush, but appreciate your pricing feed back for below models within today.

25007757	CRX890A-L4	DVD Combo 12.7 PATA Tray
25007419	AD7560A-L4	DVD Rambo 12.7 PATA Tray
25007524	AD7640A-L4	DVD Rambo 12.7 PATA Slot
25007716	CRX890S-L4	DVD Combo 12.7 SATA Tray
25007718	AD7560S-L4	DVD Rambo 12.7 SATA Tray
25007739	AD7640S-L4	DVD Rambo 12.7 SATA Slot
25007909	AD7580A-L4	DVD Rambo 12.7 PATA Tray
25007908	AD7580S-L4	DVD Rambo 12.7 SATA Tray

Best regards,

Tomomi Yamada

From: Sally.huang@qsitw.com [mailto:Sally.huang@qsitw.com]
Sent: Friday, July 25, 2008 4:09 PM
To: Yamada, Tomomi; gina.liu@qsitw.com
Cc: haw.chen@qsitw.com; Amino, Masafumi
Subject: RE: Augut Price to Lenovo

Dear Yamada-san:

I already complained to TSR and asked them to revise their Q2 report. We highlight to Lenovo that price trend in TSR report is too low not only 12.7mm DVD RW but also other ODDs(9.5mm, BD). Please don't make any promise to Lenovo that we will follow TSR price trend. Also, I informed other ODD makers to make same complain to TSR. Could you ask your marketing to NOT provide aggressive price to TSR? TSR told me that most of Japanese ODD makers agreed their price trend but such condition will impact our real business.

Sally

+886-955707205

From: Yamada, Tomomi [mailto:Tomomi.Yamada@jp.sonyec-optiarc.com]
Sent: Friday, July 25, 2008 2:52 PM
To: gina.liu 劉佳芳
Cc: haw.chen 陳尚昊; Amino, Masafumi; Sally.huang 黃雅平
Subject: RE: Augut Price to Lenovo

Hi Gina,

Understand. I will wait for your information.

By the way, I enovo not TSR market price data and it said \$28 in CO3 and \$27 in CO4 and it is now for their

guideline...

Best regards,

Tomomi Yamada

From: gina.liu@qsitw.com [mailto:gina.liu@qsitw.com]
Sent: Friday, July 25, 2008 2:45 PM
To: Yamada, Tomomi
Cc: haw.chen@qsitw.com; Amino, Masafumi; Sally.huang@qsitw.com
Subject: RE: Augut Price to Lenovo

Dear Yamada san

Sorry for late reply.

I might not be able to provide your Aug price by 7/28, because I haven't finalized price with SH team. But I'll provide you by end of July.

Best regards,

Gina Liu

Quanta Storage Inc.

Sales & Marketing Division

Tel TW: 886-(0)3-3288090 ext.1117

Cell TW: 886-(0)989549608

Tel CN: +86-37748068 ext.68119

Cell CN: 86-1376-160-2698

From: Yamada, Tomomi [mailto:Tomomi.Yamada@jp.sony-nec-optiarc.com]
Sent: Thursday, July 24, 2008 4:56 PM
To: gina.liu 劉佳芳
Cc: haw.chen 陳尚昊; Amino, Masafumi
Subject: Augut Price to Lenovo

Dear Gina,

We will need to fix August Price for Lenovo.

25007757	CRX890A-L4	DVD Combo 12.7 PATA Tray
25007419	AD7560A-L4	DVD Rambo 12.7 PATA Tray
25007524	AD7640A-L4	DVD Rambo 12.7 PATA Slot
25007716	CRX890S-L4	DVD Combo 12.7 SATA Tray
25007718	AD7560S-L4	DVD Rambo 12.7 SATA Tray
25007739	AD7640S-L4	DVD Rambo 12.7 SATA Slot
25007909	AD7580A-L4	DVD Rambo 12.7 PATA Tray
25007908	AD7580S-L4	DVD Rambo 12.7 SATA Tray

Would you please let me know agreed price with Lenovo Shanghai by 7/28 Monday around noon time?

I will update the quotation sheet to Sannohmaru-san and Charles all together.

Also is it possible for you to estimate CQ4 average price? Rough is OK. Sannohmaru-san wants to see the projection.

Thank you in advance.

Best regards,

Tomomi Yamada

From: gina.liu@qsitw.com [mailto:gina.liu@qsitw.com]
Sent: Monday, June 30, 2008 2:58 PM
To: Yamada, Tomomi
Cc: haw.chen@qsitw.com; Amino, Masafumi
Subject: RE: Quotation for CQ3 ODD

Dear Yamada san:

Please find attached quotation.

Best regards,

Gina Liu

Quanta Storage Inc.

Sales & Marketing Division

Tel TW: 886-(0)3-3288090 ext.1117

Cell TW: 886-(0)989549608

Tel CN: +86-37748068 ext.68119

Cell CN: 86-1376-160-2698

From: Yamada, Tomomi [mailto:Tomomi.Yamada@jp.sonyec-optiarc.com]

Sent: Monday, June 30, 2008 1:10 PM

To: gina.liu 劉佳芳

Cc: haw.chen 陳尚昊; Amino, Masafumi

Subject: RE: Quotation for CQ3 ODD

Hi Gina,

Sorry to push you but can I have your price information by today 17:00 your time?

Tomomi Yamada

From: gina.liu@qsitw.com [mailto:gina.liu@qsitw.com]

Sent: Thursday, June 26, 2008 6:57 PM

To: Yamada, Tomomi

Cc: haw.chen@qsitw.com; Amino, Masafumi

Subject: RE: Quotation for CQ3 ODD

Dear Yamada san:

Sorry for late reply. I will provide you price quotation by next Monday.

Best regards,

Gina Liu

Quanta Storage Inc.

Sales & Marketing Division

Tel TW: 886-(0)3-3288090 ext.1117

Cell TW: 886-(0)989549608

Tel CN: +86-37748068 ext.68119

Cell CN: 86-1376-160-2698

From: Yamada, Tomomi [mailto:Tomomi.Yamada@jp.sonyec-optiarc.com]
Sent: Tuesday, June 24, 2008 9:50 PM
To: gina.liu 劉佳芳
Cc: haw.chen 陳尚昊; Amino, Masafumi
Subject: RE: Quotation for CQ3 ODD

Hi Gina,

Is it possible for you to fix within this week and let me know by Monday next week?

Thanks!

Tomomi Yamada

From: gina.liu@qsitw.com [mailto:gina.liu@qsitw.com]
Sent: Tuesday, June 24, 2008 7:23 PM
To: Yamada, Tomomi
Cc: haw.chen@qsitw.com; Amino, Masafumi
Subject: RE: Quotation for CQ3 ODD

Dear Yamada san:

We haven't fixed price yet, but we will provide you once we fix them

Best regards,

Gina Liu

Quanta Storage Inc.

Sales & Marketing Division

Tel TW: 886-(0)3-3288090 ext.1117

Cell TW: 886-(0)989549608

Tel CN: +86-37748068 ext.68119

Cell CN: 86-1376-160-2698

From: Yamada, Tomomi [mailto:Tomomi.Yamada@jp.sonyec-optiarc.com]

Sent: Tuesday, June 24, 2008 2:33 PM

To: gina.liu 劉佳芳

Cc: haw.chen 陳尚昊; Amino, Masafumi

Subject: RE: Quotation for CQ3 ODD

Hi Gina,

Have you fixed July Price with Lenovo Shanghai team?

Sannohmaru-san needs those by today if possible.

12.7mm Rambo Slot PATA	25-007524	NA	AD7640A-L4
12.7mm Rambo Slot SATA	25-007739	NA	AD7640S-L4
12.7mm Rambo Tray PATA	25-007419	NA	AD7560A-L4
12.7mm Rambo Tray SATA	25-007718	NA	AD7560S-L4
12.7mm Rambo Tray SATA	25-007908	NA	AD7580S-L4

12.7mm Rambo Tray PATA	25-007909	NA	AD7580A-L4
12.7mm Combo Tray PATA	25- 007197	NA	CRX880A-L4
12.7mm Combo Tray PATA	25-007757	NA	CRX890A-L4
12.7mm Combo Tray SATA	25-007716	NA	CRX890S-L4

Best regards,

Tomomi Yamada

From: gina.liu@qsitw.com [mailto:gina.liu@qsitw.com]
Sent: Monday, June 16, 2008 5:20 PM
To: Yamada, Tomomi
Subject: RE: Quotation for CQ3 ODD

Dear Yamada san:

Sorry for late reply.

Current price for AD-7580A/S is \$31.8.

I will prepare July quote later this month and will update you July quote for AD-7580A/S once I have it.

Best regards,

Gina Liu

Quanta Storage Inc.

Sales & Marketing Division

Tel TW: 886-(0)3-3288090 ext.1117

Cell TW: 886-(0)989549608

Tel CN: +86-37748068 ext.68119

Cell CN: 86-1376-160-2698

From: Yamada, Tomomi [mailto:Tomomi.Yamada@jp.sonyec-optiarc.com]

Sent: Monday, June 16, 2008 1:13 PM

To: gina.liu 劉佳芳

Subject: FW: Quotation for CQ3 ODD

Dear Gina,

Will you be able to update AD7580A/S price to Lenovo?

Tomomi Yamada

From: Charles Cai [mailto:chcai@lenovo.com]

Sent: Monday, June 16, 2008 2:04 PM

To: Yamada, Tomomi

Subject: RE: Quotation for CQ3 ODD

Hi Yamada san,

I heard there would be a updated version for Slim ODD quotation, can you re-quote it to me formally? BTW, I can't find the price for 25007908 and 25007909 (AD7580A/S), would you pls also include it in the quotation? Thanks.

BEST REGARDS!

Charles Cai

GCM, ODD

Global Procurement

中国深圳市南山区高新技术产业园区南一路联想研发中心

6/F, Lenovo Research & Development Buliding, Nanyi Road, High-tech Industry Park,
Nanshan District, Shenzhen, China (518057)

Tel:(86)-755-26553388-2268 Fax:(86)-755-26013816

Mobil: 86 13560792377

E-mail:Chcai@lenovo.com

□ "Yamada, Tomomi" <Tomomi.Yamada@jp.sonyec-optiarc.com>

"Yamada, Tomomi"
<Tomomi.Yamada@jp.sonyec-optiarc.com>

2008-05-30 17:34

"Charles Cai"
To<chcai@lenovo.com>

"Ryuhichi Sannohmaru"
cc<rsan@lenovo.com>, "Vicky Chan"
<chendy1@lenovo.com>, "Edward
Liu" <liuxz1@lenovo.com>,
"Amino, Masafumi"
<Masafumi.Amino@jp.sonyec-optiarc.com>

RE: Quotation for CQ3 ODD
Subject

Dear Charles,
Cc Edward, Sannohmaru-san, Vicky,

Please find the attached quotation sheet, One for PDF with signature and another one for Excel file for your reference.
It would be highly appreciated if you could give us your feed back next week.

Best regards and have a nice weekend.

Tomomi Yamada
Sony NEC Optiarc Inc.
+81-3-5435-3743

From: Charles Cai [<mailto:chcai@lenovo.com>]
Sent: Monday, May 26, 2008 3:41 PM
Cc: Ryuhichi Sannohmaru; Vicky Chan; Edward Liu
Subject: Quotation for CQ3 ODD

Dear supplier,

As discussed in QBR, quotation for CQ3 ODD should be finished within May.
Due to some misunderstanding caused by not clear information and in order to avoid it in future, also to save time for communication, this time I designed the format for you to input.

Some detail explanation for your reference:

- Pls seperate into 2 files for DT and NB respectively
- The price input is not only for current running P/N, any EOL model which still have stock in HUB for future pull (e.g., some CD driver or for service usage) should also be added into the sheet.
- Pls only input **ONE P/N in each grid** of P/N column, if there are several correspondend Lenovo PN for one Model, pls seperate into different lines
- When LI/LC price is the same for the same supplier model, they could be input in the same line for LI PN and LC PN, but if the price is not the same, pls seperate into different lines
- Model means supplier model, such as: GCCXXXX, TSXXXX, ADXXXX, UJXXX, DHXXXX, etc.
- Description column need to include: CD/DVD/BD, ROM/COMBO/RAMBO, 12.7MM/9.5MM/7MM (For slim), PATA/SATA, Slot/Tray, for Thinkpad/Boxster/Turin/Bare.
- EOL column need to input actual EOL date for EOL part, or estimated EOL date for running part, if no plan, just leave it blank.
- Finished form should be signed by authorized person and send **PDF file to us as formal quotation**
- Finished excel form pls also send to us for our reference

(See attached file: Quotation.xls)

BEST REGARDS!

Charles Cai

GCM, ODD

Global Procurement

中国深圳市南山区高新技术产业园区南一路联想研发中心
6/F, Lenovo Research & Development Buliding, Nanyi Road, High-tech
Industry Park,
Nanshan District, Shenzhen, China
Tel:(86)-755-26553388-2268 Fax:(86)-755-26013816

Mobil: 86 13560792377

E-mail:Chcai@lenovo.com

[attachment "Optiarc Quotation CQ3 (2008_05_30).xls" deleted by Charles Cai/LENOVO] [attachment "Optiarc Quotation CQ3 (2008_05_30).pdf" deleted by Charles Cai/LENOVO]

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Pgcount	13	ORIGINAL
Source	Quanta	ORIGINAL
Subject	RE: Augut Price to Lenovo	ORIGINAL
To	gina.liu ; Sally.huang	ORIGINAL

EXHIBIT 55

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE OPTICAL DISK DRIVE PRODUCTS
ANTITRUST LITIGATION

No. 3:10-md-2143 RS

EXPERT REPORT OF DR. LUIS
CABRAL

DATE ACTION FILED: Oct. 27, 2009

This Document Relates to:

ALL INDIRECT PURCHASER ACTIONS

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IV. CONCLUSION46

III. OPINIONS AND CONCLUSIONS REGARDING EXISTENCE OF COLLUSION IN THE ODD INDUSTRY

A. Market Conditions in the Present Case

46. There were multiple factors present in the ODD industry that made it more susceptible to collusion during the period of the alleged collusion. These included 1) a highly concentrated market, dominated by a small number of producers—facilitated by a series of cross-licensing and other business partnerships between supposed “competitors”; 2) high barriers to industry entry, both because of high manufacturing and R&D costs; and the need to license a portfolio of essential patents from standard-setting patent pools run by the Defendants, at high royalty rates; and 3) contact by the defendants across multiple markets and products.

1. Concentration Among Sellers and an Extensive Pattern of Cross-Ownership and Joint Ventures

47. It is easier to organize and maintain price-fixing collusion where a small number of firms dominate the market. With smaller numbers of firms in the market, any potential gains from defecting from an industry-wide cartel are also reduced.

48. I have reviewed portions of Dr. Flamm’s report where he presents a Herfindahl Hirschman Index (HHI) of Concentration for the ODD market. I understand that the top three producers alone went from accounting for less than 1/3 of industry output in 1998, to 2/3 of output in 2007.

49. It is also well-accepted as an economic matter that when a firm participates in a venture with a competitor, “even without controlling it, the scope for collusion will be enhanced.”²⁸

50. I have also reviewed portions of Dr. Flamm’s report where he presents a detailed discussion of the consolidation of the ODD industry, which began in 2000 with the merger of the optical disk operations of the Japanese company Hitachi with LG Electronics of Korea. Others quickly emulated the merger of Hitachi and LG into HLDS.

51. The following chart is a brief summary of the consolidation of the ODD industry that occurred from the early 2000s through the end of the class period:

Date	Description of Event	Defendant(s)/Defendant Family
11/22/00	Hitachi and LG sign a Joint Venture Agreement titled “Service Agreement” creating Hitachi LG Data Storage (“HLDS”).	HLDS, Hitachi, LG

²⁸ See Massimo Motta, *Competition Policy: Theory and Practice* 144 (Cambridge University Press 2004).

Date	Description of Event	Defendant(s)/Defendant Family
04/01/04	Samsung Electronics Co., Ltd. and Toshiba Corp. establish TSST.	TSST, Toshiba, Samsung
04/25/03	BenQ and Philips enter into a Joint Venture Agreement through which “PBDS” is formed.	BenQ, Philips
11/17/05	Sony NEC JV announced. Actual merger will take place in April 2006.	Sony, NEC
04/01/06	Sony Optical Division Group merged with NEC and became Sony NEC Optiarc	Sony
03/01/07	In the first half 2007, Lite-On acquired BenQ Corporation’s 49% interest in PBDS and the joint venture was renamed Philips Lite-On Digital Storage (“PLDS”).	Philips, Lite-On, PLDS, BenQ
12/01/08	NEC sells interest in Sony NEC Optiarc to Sony.	Sony, NEC

2. Barriers to Entry

52. It is well-recognized in the economics literature that higher entry barriers make it easier to sustain collusive prices.²⁹ Absent entry barriers, outsiders will enter and price aggressively, which will force the cartel to respond with lower prices; or outsiders will attempt to join the cartel, which will increase the number of cartel participants and make the agreement less stable. In the ODD industry, at least two factors point to high barriers to entry: high research and manufacturing costs; and the need to license essential patents from the incumbent firms.

a. Cost of Research and Manufacturing

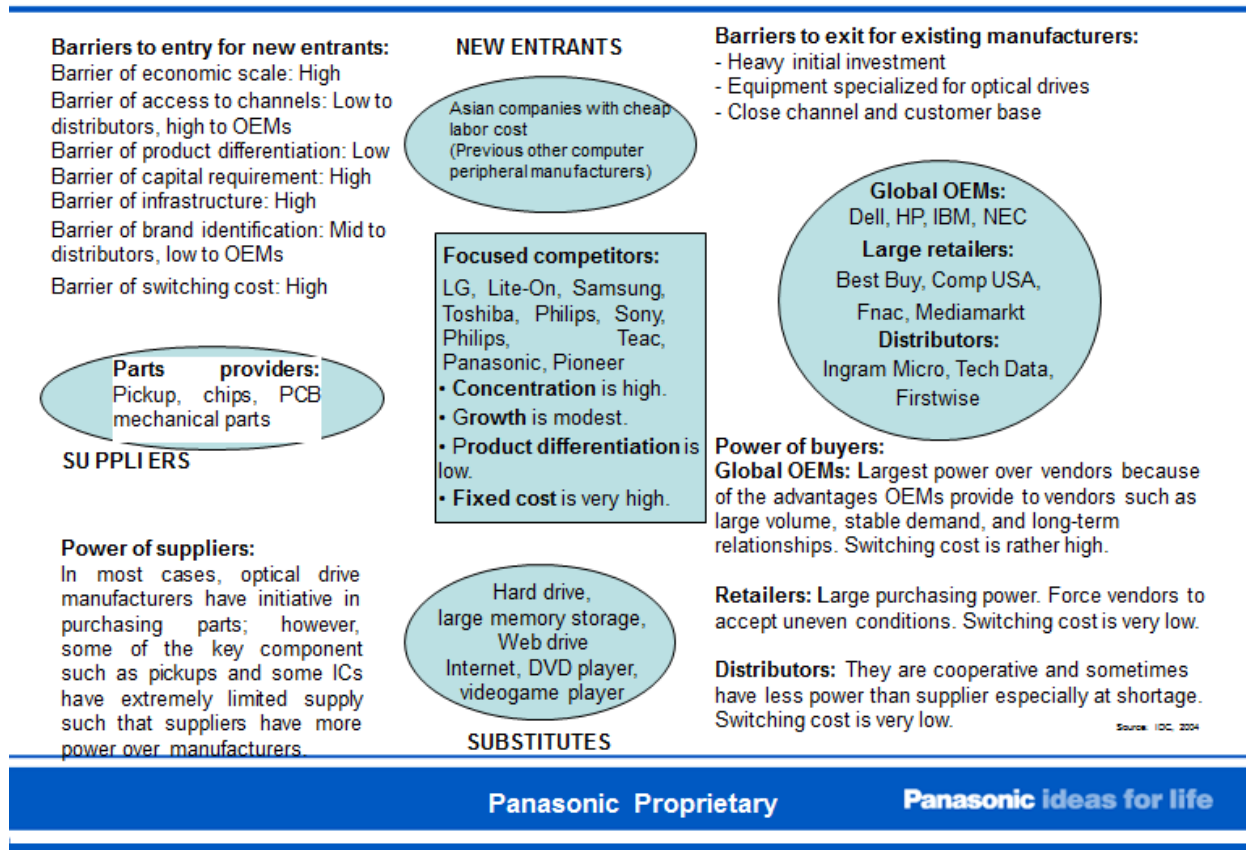
53. Everything else the same, entry is more difficult in research-and-development intensive industries that require substantial upfront know-how and investment.

54. The ODD industry was not characterized by meaningful entry throughout the class period. Industry participants themselves recognized the difficulty in entering the market. An internal Panasonic document rated barriers to entry for new entrants “high” for economic scale, capital requirement, infrastructure, and switching costs.³⁰

²⁹ See e.g., *id.* at 143.

³⁰ See PNA-CIV-0000526565 at 27.

Michael Porter's Five Forces for ODD Manufacturers



55. Another ODD manufacturer, PBDS, determined that “Startup costs for Slim Form Factor Optical Disc products are extremely high for non-ODD producers; however, relatively seamless for an existing ODD manufacturer to penetrate this industry” (PBDS also found that although startup costs were high, products and lines were easily substituted for those participants already in the market).³¹

56. One witness, Derek David (a corporate representative of Teac), testified that the high costs of research and manufacturing led erstwhile competitors to form “bonds” (in addition to acting as barriers to entry):

[T]here was a very deep working relationship between the two companies, or they were sharing resources. And you’ll see this a lot in this industry because of the costs of bringing some of these products to market, not only the R&D expenses but the manufacturing. So there was a – there was a lot of bonds that were formed to help each other.³²

³¹ ODDCIV00046599 at 4.

³² Derek Davis Dep. Tr. (Teac) at 115:3-115:10.

b. Need to License a Portfolio of Essential Patents from Standard-Setting Patent Pools Run by the Defendants

57. ODD manufacturing requires licenses to essential patents controlled by several patent pools run by the Defendants. The first generation of ODD technology used to store computer data was based on the CD-ROM (“Compact Disc-Read Only Memory”) introduced by defendants Sony and Philips in 1984, shortly after they had introduced a related digital music playback system, the CD-DA (Compact Disc-Digital Audio) in 1981.³³ The CD-ROM could only be read, not written onto, and write-once (CD-R, for Recordable) and write-many times (CD-RW, for ReWriteable) technology compatible with the CD-ROM format was later developed by Sony, Philips, and disc materials producer partners. The CD-R specifications were published in 1990, the CD-RW specifications in 1996.

58. Eager to establish these standards, Philips and Sony offered relatively generous licensing terms to other hardware producers. After paying a royalty amounting to approximately 2 to 3 percent of sales, other manufacturers were free to make and sell these products. As a result, multiple producers entered into the ODD business. At first these were primarily Japanese firms (Hitachi and Toshiba were quick to enter), but by the mid-1990s, they had been joined by Korean and Taiwanese producers—roughly 65 producers had entered by 1995.³⁴ Prices for optical disk recorders plummeted—from \$15,000 in 1990, to \$1,000 in 1995.³⁵

59. The Korean and Taiwanese producers entering into the business in the mid-1990s managed within a short period of time to compete successfully for a major share of ODD markets. Prices for ODDs plunged steadily and quickly in this highly competitive market, even as improved, higher-speed drives were being introduced by the increasing numbers of firms elbowing each other for market share. From 1995 through 2000, the Bank of Korea’s price index for ODDs, on a dollar basis, dropped at a compound annual rate of -38.1 percent.³⁶

60. In the early 1990s, it became apparent that technological improvements would permit an order of magnitude more data to be stored on the same size disc, and to be played back at a much faster rate, enabling the storage and retrieval of high quality motion picture images from the same size optical disc then being used to market and sell music. Two rival groups of

³³ See J.B. H. Peek & J.P. Sinjou, *The CD System as Standardized by Philips and Sony*, in H. Peek, J. Bergmans, J. van Haaren, F. Toolenaar, & S. Stan, *Origins and Successors of the Compact Disc*, Contributions of Philips to Optical Storage (Springer, 2009); S.G. Stan, *Compact Disc Standards and Formats*, in Peek, Bergmans, van Haaren, Toolenaar, & Stan 138-39, *supra*.

³⁴ See O. Khessina, *Effects of Entry Mode and Incumbency Status on the Rates of Firm Product Innovation in the Optical Disk Drive Industry, 1983-1999*, Report 2002-01 Figure 2, at 45 Information Storage Industry Center, University of California, San Diego (October 2002).

³⁵ *The Hows and Whys of Optical Proliferation (Interview with Carl M. Rodia)*, 10 Tape-Disc Business 12 (Dec. 1995); L.S. Kempster, *A Media Maniac’s Guide to Removable Mass Storage Media*, Nonvolatile Memory Technology Conference 184 (1986). See also S.L. Adkins, “CD-ROM: A Review Of The 1994-95 Literature, 16 Computers in Libraries. 1 (Jan. 1996).

³⁶ Computed from Bank of Korea Producer Price Index for Optical Disk Drives on a dollar basis.

manufacturers worked on different technological solutions, one clustered around Philips and Sony, the other around Toshiba, Hitachi, Panasonic, and Pioneer.³⁷

61. Under pressure from the computer industry, a single standard was agreed to for read-only systems for both video data (DVD-Video) and computer data (DVD-ROM). The two rival groups were unable to agree to a single DVD (Digital Video—or Versatile—Disc) standard for recordable and rewriteable DVDs. They invented technologically distinct standards: the Philips-Sony group developed the “+” standard (DVD+R, DVD+RW), while the other group developed the “-” standard (DVD-R, DVD-RW). Ultimately, bowing to user demands, ODD producers began to market multi-format drives after 2000, capable of reading and writing to either of these competing formats for recordable DVD discs.³⁸ Effectively, manufacturers of ODDs had to license both sets of technology from their respective patent pools, or the essential patent owners, in order to produce these products.

62. Further, this new generation of DVD format drives also came into being with a subtle but highly significant change in the way in which the two patent pools controlling these technologies structured their licensing terms. Rather than being a fixed (and relatively small) percentage of the sales price of the drive, the DVD royalties were set as the maximum of either a fixed, per-unit specific fee, or an ad-valorem percentage of the sales price of the drive. When a DVD drive cost a thousand dollars, as they initially did, this meant that the royalty cost to the two pools for a licensee was approximately 7 to 8 percent of the value of sales.³⁹ As price fell, however, the minimum specific royalties became binding. By 2008, royalties on a DVD recorder amounted to almost 70 percent of the average sales price for the unit.⁴⁰

63. Members of the patent pool, however, did not pay royalties into the pool, and members of the two pools appear to have cross-licensed each other at minimal cost. Thus, firms within the patent pools had vastly reduced royalty costs compared to firms outside the pools.

3. Multi-Market Contact

64. As outlined above, when sellers compete in multiple markets, their chances of establishing a stable agreement increase significantly.⁴¹ Here, the ODD manufacturers interacted

³⁷ See D.J. Lee, *A Study On The Standards In Optical Storage Device Industry*, M.S. Thesis, Sloan School, MIT (2000); S. Gauch, + vs -: *Dynamics and Effects of Competing Standards of Recordable DVD-Media*, in T.M. Egyedi & K. Blind, Ed., *The Dynamics of Standards*, (E. Elgar), 2009; R. Bekkers, E. Iversen & K. Blind, *Patent Pools and Non-Assertion Agreements: Coordination Mechanisms for Multi-Party IPR Holders in Standardization*, Paper for the EASST 2006 Conference (Lausanne, Switzerland Aug. 2006); R. Aoki & S. Nagaoka, *Coalition Formation of a Standard Consortium and a Patent Pool: Theory and Evidence From MPEG2, DVD, And 3G* (March 2007).

³⁸ Indeed, there was yet another rewriteable format for computer data, DVD-RAM, which was also incorporated into multi-format DVD writer products.

³⁹ The two patent pool licensing programs reportedly used ad valorem rates of 3.5 and 4 percent of sales as input into this calculation around 2006. See *Laserdynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 60 (Fed. Cir. 2012).

⁴⁰ Based on the average sales price found in IDC’s Worldwide Blu-Ray, DVD, CD, and Other Optical Storage Drive 2009 - 2013 Forecast and Analysis, Table 20, and the DVD royalties shown in Hisashi Kato, *Current Status and Issues Such As Patent Pools in the Area of Electronics* at 22.

⁴¹ B. Douglas Bernheim & Michael D. Whinston, *Multimarket Contact and Collusive Behavior*, 21 RAND J. Econ. 1-26 (1990).

in many products and geographical regions, which strengthened the ability to punish deviations from collusive agreements, as cheating on the agreement in one geographical market or product can be punished in another market or product. As a consequence, stability and duration of an alleged collusive agreement is enhanced by multimarket contact.

65. The following chart summarizes the involvement of defendants and their related entities in the various price-fixing conspiracies:

INDUSTRY	GOVERNMENT INVOLVED	DEFENDANTS IMPLICATED
LCD	Korea, Japan, United States	LG Electronics Inc. (joint venture), Koninklijke Philips Electronics N.V. (joint venture), Samsung Electronics Company, Ltd, Hitachi, Ltd. (subsidiary), Toshiba Corp.
DRAM	United States, European Commission	Samsung Electronics Company, Ltd, NEC Corp., Hitachi Ltd., Toshiba Corp.
CRT	Korea, Japan, United States, European Commission	Samsung (subsidiary), LG Electronics Inc. (joint venture), Koninklijke Philips Electronics N.V. (joint venture)
LIB	United States, European Commission	Sony, Panasonic, Samsung, LG, NEC, Toshiba, Hitachi.

66. The chart shows extensive overlap among the defendants, both in terms of product and in terms of geographical area. I next examine these in greater detail.

a. Defendants Have Plead Guilty to Participating in Price-Fixing Meetings in the United States and for Fixing the Price of LCD Panels and LCD Products Sold in the United States

67. The following ODD defendant families have been connected to a worldwide price-fixing conspiracy for thin film transistor liquid crystal displays (TFT-LCD): LG, Samsung, Hitachi, and Toshiba.

68. In December 2006, authorities in Japan, South Korea, the European Union, and the United States revealed the existence of a comprehensive investigation into anti-competitive activity among LCD Panel manufacturers. In a December 11, 2006, filing with the SEC, LG Display Co. Ltd. (LG Display) disclosed for the first time that officials from the Korea Fair Trade Commission and Japan Fair Trade Commission visited the company's Seoul and Tokyo offices and that the DOJ had issued a subpoena to its San Jose office. During the time period relevant to the LCD price-fixing conspiracy, LG Display was a joint venture between defendants LG Electronics and Philips, with LG Electronics owning 37.9 percent and Philips owning 19.9 percent as of December 31, 2007.

69. On December 12, 2006, news reports indicated that in addition to LG Display, Samsung was also under investigation.

70. In November 2008, LG Display admitted and plead guilty to participating in the conspiracy from September 2001 through June 2006 to fix the price of LCD Panels sold worldwide, and to participating in meetings, conversations and communications in Taiwan, South Korea and the United States to discuss the prices of LCD Panels, agreeing to fix the prices of LCD Panels, and exchanging pricing and sales information for the purpose of monitoring and enforcing adherence to the agreed-upon prices. In connection with its guilty plea, LG Display has agreed to pay a fine of \$400 million for its participation in the conspiracy, which was reported at the time as the second-highest criminal fine ever imposed by the DOJ's Antitrust Division.

71. In addition, three LG Display executives have pled guilty based on their respective roles in the global cartel. Each received prison sentences ranging from seven to twelve months and paid criminal fines:

- Chang Suk "C.S." Chung, an executive from LG Display. In connection with his guilty plea, Mr. Chung has agreed to serve a 7-month prison term and pay a criminal fine of \$25,000.
- Bock Kwon, an executive from LG Display. Mr. Kwon pled guilty and was sentenced to a 12-month prison term and a criminal fine of \$30,000.
- Duk Mo Koo, former Executive Vice President and Chief Sales Officer from LG Display, was indicted for participating in the conspiracy to fix the price of TFT-LCD Panels sold worldwide from December 2001 through December 2005.

72. Hitachi acknowledged in its Form 20-F, filed with the SEC on June 29, 2010, that a subsidiary, Hitachi Displays, had plead guilty to price fixing in the TFT-LCD industry and paid a fine of \$31 million to the DOJ in March 2009. Sakae Someya, a Hitachi executive, was criminally indicted in March 2009 for his role in the TFT-LCD price fixing conspiracy.⁴²

73. In 2009, civil plaintiffs in litigation arising from the TFT-LCD price-fixing conspiracy sought to discover whether or not Samsung was participating in the DOJ leniency program with respect to the DOJ's investigation into the market for TFT-LCD, meaning that it has admitted its participation in the cartel.

74. Samsung, LG, and Hitachi were part of a group of defendants that reached a total of \$388 million in settlement with a class action of direct purchasers to resolve claims arising from the TFT-LCD price fixing conspiracy.⁴³ Samsung agreed to pay \$82,672,242; LG \$75,000,000; and Hitachi \$28,000,000.

⁴² *United States v. Sakae Someya*, No. 09-cr-00329, Mar. 31, 2009, ECF No. 1.

⁴³ Direct Purchaser Class Plaintiffs' Notice of Motion and Motion and Memorandum of Points and Authorities in Support of Motion for Final Approval of Settlement with the Chimei, Hannstar, Hitachi, LG Display, Mitsui, Samsung, Sanyo, and Sharp Defendants, *In re TFT-LCD (Flat Panel) Antitrust Litig.* ("TFT-LCD"), No. 07-md-1827 (N.D. Cal. Dec. 5, 2011) ECF No. 4275.

75. A class action of indirect purchaser plaintiffs eventually achieved a total of \$1.1 billion in settlements for damages arising from the TFT-LCD price-fixing conspiracy.⁴⁴ LG, Samsung, Hitachi, and Toshiba each paid settlements as part of the resolution of this litigation, with LG paying \$380 million to resolve the claims brought by the IPP class.

76. A jury assessed an \$87 million verdict against Toshiba for its role in the TFT-LCD direct purchaser class action. The jury assigned \$70 million in damages for customers who bought finished products containing LCD panels from Toshiba and \$17 million in damages for customers who bought LCDs directly from Toshiba.⁴⁵

77. Costco, an individual direct purchaser, was awarded nearly \$37 million in damages after a jury verdict that LG, as well as other defendants, had participated in a global price-fixing conspiracy for TFT-LCD panels.⁴⁶

78. Documents produced in this case confirm that the sales representatives and employees responsible for the sales of ODDs often had detailed communications with employees responsible for sales of LCDs. For example:

- **ODD-CIV003412903**: A PLDS employee (Fredrick Wong) sends an e-mail to other PLDS employees regarding “Info on HLDS.” The PLDS employee provides detailed information regarding HLDS negotiations with Dell for ODD drives, including the price quotes that HLDS was planning to give to Dell on new models of their BD writer drives. The email also reports that “LG Philips LCD told him that Dell bought 17 million LCD Panels (total from all panel suppliers for their notebook in 2007. This translate [sic] to 17 millions notebook for Dell.”
- **T-ODD-00040774-75 (Ex. 1906, 1906A)**: A TSST individual (Nobuhiro Ito) responsible for “overseas sales” (which included the United States), attended a meeting at Japan HP. The meeting was attended by both ODD and LCD manufacturers. Mr. Ito, due to a limitation in time, was able only to “chat with the individuals from ODD related manufacturers.” The ODD suppliers also agreed to “information exchange meeting in the future.”
- **PNA-CIV00337875 (Ex. 1123)**: A Panasonic employee (Amy Salter) wrote an e-mail update to other Panasonic employees regarding extensive competitive information that she had obtained from HLDS and TSST employees regarding both ODD and LCD pricing. Ms. Salter reported that “HLDS top executives from Korea and Japan arrived today for top level meetings at Hp. Main topics will be joint battery, ODD and LCD discussions. Other discussions will be QBR scores for ODD. LG is #1 battery but HLDS

⁴⁴ Order Granting Final Approval of Combined Class, Parens Patriae, and Governmental Entity Settlements with AUO, LG Display, and Toshiba Defendants; Final Judgment of Dismissal with Prejudice; Award of Attorneys’ Fees, Expenses, and Incentive Awards, *TFT-LCD*, Mar. 29, 2013, ECF No. 7685.

⁴⁵ Special Verdict, *TFT-LCD*, July 3, 2012, ECF No. 6061.

⁴⁶ Verdict Form, *Costco Wholesale Corporation v. AU Optonics Corp.* No. 13-cv-1207 (W.D. Wash. Oct. 23, 2014), ECF No. 628.

group dropped to 3rd position. HP is asking HLDS for plan to get back to #1 ODD position.”

- **HLDS-CIV1918191**: Employees of the LG defendant family communicated regarding the supply of batteries at Matsushita. An HLDS employee (Eugene Yang) gave colleagues information regarding Matsushita’s restart of a battery plant damaged by fire that an LG Chemical of America employee (Brian Oh) had confirmed with Dell.
- **HLDS-CIV0602917**: An employee of HLDS (Daniel Hur) asked an LG Display employee (Terry Lim) to recommend an LG Display employee with whom HLDS, LG Chemical and LG Display could collaboratively discuss HP-related matters. Daniel Hur later instructed an HLDS employee (John Yoo) to regularly discuss HP-related matters with a LG Chemical employee (Brian Oh).

b. Defendants Have Admitted to Participating in Price-Fixing Meetings in the United States and for Fixing the Price of Dynamic Random Access Memory Sold in the United States and in Europe.

79. The following ODD defendant families have been connected to a worldwide price-fixing conspiracy for dynamic random access memory (DRAM) in both the United States and Europe: Samsung, Toshiba, NEC, and Hitachi. DRAM is a common model for “dynamic” semiconductor memories for personal computers (PCs), servers and workstations.

80. In 2005, defendant Samsung agreed to plead guilty to participating in a price-fixing conspiracy involving DRAM in the United States. As part of its guilty plea, Samsung agreed to pay a fine of \$300 million. It is believed that during the DRAM conspiracy, at least 48 Samsung officers and employees, including senior executives with final pricing authority, had price-related contacts with employees of Toshiba, NEC and Hitachi.

81. At least six Samsung executives pled guilty based on their respective roles in the global cartel. Each was fined \$250,000, and the executives received prison sentences ranging from seven to fourteen months. Among the Samsung individuals charged were the vice presidents for marketing and sales for Samsung’s memory division and the vice president for marketing of memory products at Samsung Semiconductor (a United States subsidiary of Samsung):

- Il Ung Kim (Samsung Electronics—vice president of marketing for memory division) \$250,000 fine and 14 month prison sentence.
- Sun Woo Lee (Samsung Electronics—senior manager DRAM sales) \$250,000 fine and 8 month prison sentence.
- Yeongho Kang (Samsung Semiconductor—associate director of DRAM -marketing) \$250,000 fine and 7 month prison sentence.
- Young Woo Lee (Samsung subsidiary in Germany—sales director) \$250,000 fine and 7 month prison sentence.

- Thomas Quinn (Samsung Semiconductor—vice president of marketing for memory products) \$250,000 fine and 8 month prison sentence.
- Young Hwan Park (former VP of sales at Samsung Electronics; former president of Samsung Semiconductor) \$250,000 fine and 10 month prison sentence.
- Young Bae Rha (Samsung Electronics—vice president of sales and marketing for memory division); Charged in October 2006 indictment and remains at large.

82. In May 2010, a number of defendants admitted to participating in a cartel to fix the price of DRAM sold in the European Union and agreed to pay, collectively, 331 million Euros in fines.

83. As the European Commission found, the overall cartel was in operation between July 1, 1998 and June 15, 2002. It involved a network of contacts and sharing of secret information, mostly on a bilateral basis, through which they coordinated the price levels and quotations for DRAM, sold to major PC or server OEMs in the European Economic Area.

84. Several of the defendants admitted to the participation in the DRAM price-fixing cartel. Between December 2003 and February 2006, defendants Samsung and NEC applied for leniency under the European Union's Leniency Notice. Companies that are first to reveal cartels to the Commission enjoy immunity from fines under the Commission's 2002 Leniency Notice. Companies that cooperate in the investigation can receive significant reductions. Companies which do not qualify for immunity may benefit from a reduction of fines if they provide evidence that represents "significant added value" to that already in the Commission's possession and have terminated their participation in the cartel. Evidence is considered to be of a "significant added value" for the Commission when it reinforces its ability to prove the infringement of Europe's antitrust laws.

85. Both Samsung and NEC cooperated with the European Commission, supplying information that provided significant added value in enabling the European Commission to prove cartel infringement. The European Commission took account of their cooperation in the investigation and granted a reduction of respectively 18 percent in the fine to both Samsung and NEC. In total, Samsung was fined over 145 million Euros and NEC was jointly and severally liable (along with its joint venture partners) for fines of approximately 21 million Euros.

86. Hitachi and Toshiba each settled with the European Commission and agreed to pay significant fines. The European Commission fined Hitachi, along with its joint venture partners, 31 million Euros, and fined Toshiba over 17 million Euros.

87. DRAM manufacturers, including Samsung, NEC, Toshiba, and Hitachi, settled a class action lawsuit brought by indirect purchasers for a total of \$310 million.⁴⁷ Samsung paid \$113 million, NEC \$20.2 million, Toshiba \$7.4 million, and Hitachi \$5.6 million.

⁴⁷ Order Granting Final Approval of Settlements, Plains of Distribution and Claims Protocols, Certifying Settlement Classes, Finally Adopting Special Master's Report and Recommendations, Part I and II; Final Judgment

c. Defendants Participated in a Price-Fixing Conspiracy of Cathode Ray Tubes

88. The following ODD defendant families have been connected to a worldwide price-fixing conspiracy for cathode ray tubes (CRT): Phillips, Panasonic, Samsung, Toshiba, LG, and Hitachi.

89. On October 7, 2009 in a cease and desist order, The Japan Fair Trade Commission levied \$37.4 million in fines against five companies, including a joint venture of defendants LG Electronics Inc. and Koninklijke Philips Electronics N.V., LG Philips Displays Korea Co., and an arm of South Korea's Samsung group and their affiliates for alleged participation in a price-fixing cartel for cathode ray tubes for televisions. The Japan Fair Trade Commission found that employees of LG Philips Display Korea and Samsung, beginning around May 2003, formed an agreement to continuously hold meetings about once every other month where they jointly set minimum target prices on a quarterly basis.

90. In November 2009, the European Commission confirmed it had sent Statements of Objections to "a number of companies active in the [CRT] industry." Although the European Commission did not disclose who received the Statements of Objections, news reports confirmed that Philips was among those targeted.

91. In 2012, The European Commission assessed approximately 1.47 billion euros in fines on the various defendants for price fixing that occurred from 1996 to 2006.⁴⁸ Philips, Samsung SDI, LG, Panasonic, Toshiba, and various Panasonic and Toshiba joint entities each received fines from the European Commission. These corporations and their various entities paid a total of approximately 1.43 billion of the 1.47 billion euro settlement with Technicolor contributing the remaining 40 million euros. Phillips and Samsung SDI had their fines reduced because they cooperated with the investigation of the European Commission.

92. The European Commission Vice President in charge of competition policy, Joaquin Almunia stated that "These cartels for cathode ray tubes are 'textbook cartels': they feature all the worst kinds of anticompetitive behavior that are strictly forbidden to companies doing business in Europe."⁴⁹

93. The European Commission stated that: "The two CRT cartels are among the most organised cartels that the Commission has investigated. For almost 10 years, the cartelists carried out the most harmful anti-competitive practices including price fixing, market sharing, customer allocation, capacity and output coordination and exchanges of commercial sensitive information. The cartelists also monitored the implementation, including auditing compliance with the capacity restrictions by plant visits in the case of the computer monitor tubes cartel. Top management level meetings, dubbed "green(s) meetings" by the cartelists themselves because

of Dismissal With Prejudice, *In re Dynamic Random Access Memory (DRAM) Antitrust Litig.*, No. M-02-1486 (N.D. Cal. June 27, 2014), ECF No. 2235.

⁴⁸ European Commission Press Release, Antitrust: Commission Fines Producers of TV and Computer Monitor Tubes € 1.47 Billion for Two Decade-Long Cartels (Dec. 5, 2012), *available at* http://europa.eu/rapid/press-release_IP-12-1317_en.htm (last visited Jan. 26, 2017).

⁴⁹ *Id.*

they were often followed by a golf game, designed the orientations for the two cartels. Preparation and implementation were carried out through lower level meetings, often referred to as “glass meetings”, on a quarterly, monthly, sometimes even weekly basis. Meetings were held in various locations in Asia (Taiwan, Korea, Japan, Malaysia, Indonesia, Thailand, Hong Kong, etc.) and Europe (Amsterdam, Budapest, Glasgow, Paris, Rome). The cartels operated worldwide. Multilateral meetings usually started with a review of demand, production, sales and capacity in the main sales areas, including Europe; then prices were discussed, including for individual customers, i.e. TV and computer manufacturers. They had therefore a direct impact on customers in the European Economic Area (EEA), ultimately harming final consumers. The cartelists were trying to address the decline of the CRT market in a collusive way, to the detriment of consumers. For example, one document recording the cartel discussions spells out clearly: “producers need to avoid price competition through controlling their production capacity.”

94. The European Commission also emphasized that “the companies were well aware they were breaking the law. For instance, in a document found during the Commission’s inspections, a warning goes as follows: “Everybody is requested to keep it as secret as it would be serious damage if it is open to customers or European Commission.” The participants were therefore taking precautions to avoid being in possession of anticompetitive documents. Some documents spelled out, for example: “Please dispose the following document after reading it”.⁵⁰

95. Between 2009 and 2010, the DOJ announced indictments against six different individuals for their role in a criminal conspiracy to fix CRT prices. Cheng Yuan Lin, the CEO of Chunghwa Picture Tubes, was indicted on February 10, 2009. Wen Jun Cheng, assistant vice president of sales and marketing at Chungwa, was indicted on August 18, 2009.⁵¹ Chun Cheng Yeh, director of sales at Chungwa, was indicted on March 30, 2010.⁵² Chun Cheng Yeh eventually pled guilty to the charge and was sentenced to eight months in prison and a \$20,000 criminal fine.⁵³ Seung-Kyu Lee and Yeong-Ug Yang, both employees of Phillips, were indicted on November 9, 2010 for their role in the conspiracy.⁵⁴ Jae-Sik Kim, an executive at Samsung, was also indicted on November 9, 2010 for his role in the conspiracy.⁵⁵

96. In 2011, Samsung plead guilty to a felony charge of conspiring to fix the prices of cathode ray tubes. Samsung SDI also paid a \$32 million fine for its role in the criminal conspiracy. The felony charge stated that Samsung SDI and co-conspirators agreed to charge prices of CDTs at certain target levels or ranges, to reduce output of CDTs by shutting down CDT production lines for certain periods of time and to allocate market shares of CDTs. As part of the conspiracy, Samsung SDI and co-conspirators exchanged CDT sales, production, market

⁵⁰ *Id.*

⁵¹ Indictment, *United States v. Wen Jun Cheng*, No. 09-cr-00836 (N.D. Cal. Aug. 18, 2009), ECF No.

⁵² Indictment, *United States v. Chung Cheng Yeh*, No. 10-cr-0231 (N.D. Cal. Mar. 30, 2010), ECF No. 1.

⁵³ Plea Agreement, *United States v. Chung Cheng Yeh*, No. 10-cr-0231 (N.D. Cal. Nov. 17, 2015), ECF No. 27.

⁵⁴ Indictment, *United States v. Seung-Kyu Lee, Yeong-Wook Yang and Jae-Sik Kim*, No. 10-cr-0817 (N.D. Cal. Nov. 9, 2010), ECF No. 1.

⁵⁵ See Amended Plea Agreement, *United States v. Samsung SDI Co., Ltd.*, No. 11-cr-0162 (N.D. Cal. May 17, 2011), ECF No. 29.

share and pricing information for the purpose of monitoring and enforcing adherence to their agreements.⁵⁶

97. Between 2012 and 2014, Chunghwa, Phillips, Panasonic, Samsung, Toshiba, LG, and Hitachi all settled claims brought by a class of CRT direct purchasers. The total value of all settlements was \$197.2 million.⁵⁷

98. Between 2011 and 2015, LG, Chunghwa, Philips, Panasonic, Samsung, Toshiba, and Hitachi paid a combined total of \$563 million to settle claims brought by indirect purchasers of cathode ray tubes.⁵⁸

d. Defendants Participated in a Long-Running Lithium-Ion Batteries Cartel in both the United States and Europe.

99. The following ODD defendant families have been connected to a worldwide price-fixing conspiracy for lithium ion batteries: Sony, Panasonic, Samsung, LG, Sanyo, NEC, Toshiba, and Hitachi.

100. Lithium ion batteries are a form of rechargeable battery cells. They are used in laptop computers, smartphones, digital music players, tablet devices, digital cameras, and cordless power tools. In June 2011, Sony disclosed that it had received a subpoena from the DOJ concerning its batteries business.⁵⁹ In June 2012, Sony disclosed in its SEC Form 20-F that the “DOJ and agencies outside the United States are investigating competition in the secondary batteries market.”

101. In September 2013, LG plead guilty to one count of conspiring to “suppress and eliminate competition by fixing the prices of cylindrical lithium ion battery cells sold in the United States and elsewhere for use in notebook battery packs from about April 2007 to about September 2008.”⁶⁰

102. In September 2015, the European Union announced an investigation into potential price-fixing in the market for lithium ion batteries.⁶¹

103. In December 2016, the European Commission announced a total of 166 million Euros in fines for Sony, Panasonic, and Sanyo.⁶² Samsung SDI was not fined because it had

⁵⁶ Information, *United States v. Samsung SDI Company, Ltd.*, No. 11-cr-0162 (N.D. Cal. Mar. 18, 2011), ECF No.1.

⁵⁷ Direct Purchaser Plaintiffs’ Notice of Motion and Motion for: 1) Preliminary Approval of Class Action Settlement with the Mitsubishi Electric Defendants at 4-5, *In re Cathode Ray Tube (CRT) Antitrust Litig.*, No. 07-cv-5944-JST (N. D. Cal. Jan. 19, 2017), ECF No. 5099.


⁵⁸ Order Granting Final Approval of Indirect Purchaser Settlements, *In re Cathode Ray Tube (CRT) Antitrust Litig.*, No. C-07-5944 JST (N.D. Cal. July 7, 2016), ECF No. 4712, *available at* <https://www.crtclaims.com/docs/Order%20Granting%20Final%20Approval%20of%20Indirect%20Purchaser%20Settlements.pdf?a=1>.

⁵⁹ Sony Corporation SEC Form 20-F for fiscal year ending March 31, 2011, filed June 28, 2011.

⁶⁰ Plea Agreement, *United States v. LG Chem, Ltd.*, No. 13-cr-0473 (N.D. Cal. Oct. 10, 2013), ECF No. 29.

⁶¹ Vin Gurrieri, *EU Antitrust Watchdog Opens Probe of Tech Battery Cartel*, Law 360 (Sept. 17, 2015), <https://www.law360.com/articles/704094/eu-antitrust-watchdog-opens-probe-of-tech-battery-cartel>.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed this 1st day of February, 2017, at New York, New York.

By 

LUIS CABRAL

EXHIBIT 56
REDACTED VERSION

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE OPTICAL DISK DRIVE PRODUCTS
ANTITRUST LITIGATION

No. 3:10-md-2143 RS

EXPERT REPORT OF DR. KENNETH
FLAMM

DATE ACTION FILED: Oct. 27, 2009

This Document Relates to:

ALL INDIRECT PURCHASER ACTIONS

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I. INTRODUCTION

A. Experience and Qualifications

1. My name is Kenneth Flamm. I am an economist specializing in applied microeconomics. I have conducted extensive research on the economics of trade, technological, and industrial competition in the computer, communications, and electronics industries. I have published numerous articles and books on these subjects. My curriculum vitae is attached to this report as Exhibit 1.

2. I have served as Professor and Dean Rusk Chair in International Affairs at the University of Texas at Austin since 1998, and I live and work in Austin, Texas. I teach graduate students and undertake research in the areas listed above as part of my duties at the University of Texas at Austin. Prior to my current position, I was a Senior Fellow at the Brookings Institution, a nonprofit research institution in Washington, D.C., doing research in these same areas. I wrote five books and numerous articles on the economics of the computer, semiconductor, and telecommunications industries while at Brookings in the 1980s and 1990s. I also served as a senior official in the U. S. Department of Defense (“Defense Department”) from 1993 to 1995, where I had primary responsibility for dual-use technology policy (*i.e.*, all policies affecting the investment in, and use of, technologies with both military and commercial applications, particularly computers, semiconductors, and software) and international programs (*i.e.*, all defense research, development, and procurement programs undertaken by the Defense Department and its private contractors, in collaboration with foreign governments and foreign industries).

3. During the time I was at the Defense Department, the availability of flat panel displays for use in military systems was perceived as a potential problem for the Defense Department. I supervised the work of a federal inter-agency task force on flat panel displays that examined that issue. That task force issued a report in 1994 which concluded that more suppliers and greater competition were needed within the industry in order to assure timely and reasonably priced access to flat panel displays for Defense Department users.¹ That report (dubbed the “Flamm Report” at the time in both the industry and trade press) articulated concerns about a high degree of concentration among existing flat panel display suppliers that “could potentially create the basis for the exercise of monopoly power” and possibly facilitate supplier refusal to supply flat panel displays for the Defense Department.²

4. Coincidentally, price-fixing litigation filed by both the Department of Justice and private plaintiffs against TFT-LCD producers after 2006,³ and subsequent guilty pleas and

¹ *Building U.S. Capabilities in Flat Drive Displays*, Flat Drive Display Task Force, U.S. Department of Defense (October 1994) (the “Flamm Report”).

² *Id.* at IV-6,7; VII-1,2.

³ See *In re TFT-LCD (Flat Panel) Antitrust Litig.*, Case No. 3:07-md-01827-SI; *United States of America v. Sharp Corp.*, Case No. 3:08-cr-00802-SI; *United States of America v. LG Display Co., Ltd. and LG Display America, Inc.*, Case No. 3:08-cr-00803-SI; *United States of America v. Chunghwa Picture Tubes, Ltd.*, Case No. 3:08-cr-00804-SI; *United States of America v. Chung*, Case No. 3:09-cr-00044-SI; *United States of America v. Lin*, Case No. 3:09-cr-00045-SI; *United States of America v. AU Optronics Corp.*, Case No. 3:09-cr-00110-SI; *United States of America v. Hitachi Displays Ltd.*, Case No. 3:09-cr-00247-SI; *United States of America v. Someya*, Case

verdicts against these producers, support the validity of the concerns voiced by the task force that I directed back in 1994. The Flamm Report also included detailed analysis and modeling of supply and demand for flat panel displays.

5. Since coming to the University of Texas, I have continued my study of the economics of the computer industry and its supplier industries and have written many articles and consulted on matters related to the economics of these industries.

6. I have served on numerous national and international panels and advisory bodies concerned with research, science, and technology issues affecting high technology industries in general, and the computer and electronics industries in particular. I have served as an expert consultant to international and government entities (the World Bank, the U.S. Department of Justice ("DOJ"), the Defense Department, the U.S. Congress's Office of Technology Assessment, and the Congressional Research Service) and have testified before various committees and subcommittees of the U.S. Congress on these issues. I have worked as a consultant on the computer and electronics industries for the National Research Council ("NRC"), a nonprofit organization created to provide unbiased technical advice to U.S. government agencies; the Semiconductor Industry Association, the trade association for the U.S. semiconductor industry; and SEMATECH, a nonprofit research consortium formed by major semiconductor producers. I also have served on numerous NRC advisory panels and committees, including its Science, Technology, and Economic Policy Board, its Committee on the Future of Supercomputing, its Committee on the National Defense Stockpile, and its Committee on the Rationale and Goals of the U.S. Civil Space Program. Finally, I have also served as a member of expert advisory committees to the National Science Foundation, the Defense Department, the Federal Networking Advisory Committee, and NATO.

7. I occasionally work as a consultant on economic issues, including the economics of industrial and technological competition, for private clients (primarily Fortune 500 companies), either providing strategic advice to be used as an input to internal business decisions or serving as an expert witness/advisor in litigation-related matters. Private firms in the computer and electronics industries with which I have worked include IBM, Digital Equipment Corporation (acquired by Compaq, in turn acquired by Hewlett Packard), AMD, AT&T, Dell Computer, eMachines (acquired by Gateway, in turn acquired by Acer), Fujitsu, Kingston Technology, Micron Technology, Texas Instruments, Hyundai Electronics (the corporate predecessor of SK Hynix), Sybase, Autodesk, Advanced MP, Soitec, and others. Government clients that have utilized me in this expert witness/advisor capacity include the Antitrust Division of the DOJ as well as antitrust bureaus within the offices of the Attorney General of numerous state governments.

8. My professional experience in all the areas referenced above, with the named entities as well as generally through my research, informs my judgments in this report. My

No. 3:09-cr-00329-EXE; *United States of America v. Epson Imaging Devices Corp.*, Case No. 3:09-cr-00854-SI; *United States of America v. Chei Mei Optoelectronics Corp.*, Case No. 3:09-cr-01166-SI; *United States of America v. Yang*, Case No. 3:10-cr-00355-SI; *United States of America v. Hannstar Display Corp.*, Case No. 3:10-cr-00498-SI; *United States of America v. Huang*, Case No. 3:10-cr-00579-SI; *United States of America v. Wang*, Case No. 3:10-cr-0756-SI; and *United States of America v. Joe*, Case No. 3:11-cr-00019-EXE.

scientific publications in these areas, for the most part externally reviewed for scientific merit by other experts prior to publication as articles or books, and my public service on relevant advisory panels and groups are listed in **Exhibit 1**. I also attach a list of my testimony in the last four years. See **Exhibit 2**.

9. My involvement in this litigation began in 2010, when I agreed to be retained by indirect purchaser plaintiffs' counsel as a source of expert consulting advice on the optical disk drive industry. My compensation for time spent on this matter is currently \$750 per hour. This compensation does not depend on the opinions and conclusions I reach or the result of this lawsuit. I have been assisted in my analysis by staff at Christensen Associates, who have worked on this matter under my supervision and direction. My analysis of this matter is continuing, and I reserve the right to supplement and revise my opinions as additional information becomes available to me. **Exhibit 3** lists the materials I have relied upon in preparing this report.

10. I submit this declaration to supplement my testimony in the [Corrected] Declaration of Dr. Kenneth Flamm in Support of Plaintiffs' Motion for Class Certification (dated June 24, 2013) ("Flamm I"), the Declaration of Dr. Kenneth Flamm in Further Support of Indirect Purchaser Plaintiffs' Motion for Class Certification (dated February 18, 2014) ("Flamm II"), the Declaration of Dr. Kenneth Flamm in Support of Indirect Purchaser Plaintiffs' Revised Motion for Class Certification (dated May 20, 2015) ("Flamm III"), and the Declaration of Dr. Kenneth Flamm in Further Support of Revised Motion for Class Certification on Behalf of Indirect Purchaser Class (dated September 18, 2015) ("Flamm IV").

11. I have been undertaking research and publishing books, articles, and reports on the computer industry for approximately 35 years. I have written or edited seven peer-reviewed books and over a dozen peer-reviewed articles on economic issues in the semiconductor, computer, and telecommunications industries over this period. So I believe it fair to say that I have deep economic expertise on the economics of this particular market and industrial competition in the computer industry that long predates this litigation. The analysis and opinions found in this and my previous reports are based on this experience and expertise, as well as documents, testimony, and analysis reviewed over the period this litigation has been before this Court.

B. Assignment

12. I have been engaged by counsel for the indirect purchaser class to determine the extent to which the indirect purchaser class was overcharged for both Optical Disk Drives ("ODDs") and finished products that contain ODDs (computers) as a result of explicit collusion among suppliers of ODDs. In undertaking this analysis, I was asked to (a) analyze the structure of the market for ODDs, and whether explicit collusion would have successfully raised prices within this market; (b) empirically estimate the magnitude of any resulting overcharge on ODDs, using detailed data on sales of ODDs by the defendants; and (c) empirically estimate any resulting overcharge on ODDs and finished goods containing ODDs sold to the indirect purchaser class by third parties, who had purchased ODDs at prices elevated by the defendants' explicitly collusive behavior.

13. It is my understanding that the following class of indirect purchasers was certified on February 8, 2016:

All persons and entities who, as residents of Arizona, California, District of Columbia, Florida, Hawaii, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, Oregon, Tennessee, Utah, Vermont, West Virginia and Wisconsin and during the period April 2003 to December 2008, purchased new for their own use and not for resale: (i) a computer with an internal ODD; (ii) a stand-alone ODD designed for internal use in computers; or (iii) an ODD designed to be attached externally to a computer.

ODD refers to a DVD-RW, DVD-ROM, or Combo drive manufactured by one or more defendants or their co-conspirators. Excluded from the class are any purchases of Panasonic-branded computers.

14. Counsel asked me to estimate damages resulting from a price-elevating conspiracy over the period from April 2003 through December 2008 (the class period).

15. Counsel instructed me that the participants in the conspiracy included, at a minimum, the following corporate entities:

- Hitachi, Ltd. (Hitachi)
- LG Electronics, Inc. and LG Electronics U.S.A., Inc. (collectively, LG)
- Hitachi-LG Data Storage, Inc. and Hitachi-LG Data Storage Korea, Inc (collectively, HLDS, a joint venture between defendants Hitachi, Ltd. and LG Electronics, Inc.)
- BenQ Corporation and BenQ America Corp. (collectively, BenQ)
- Koninklijke Philips Electronics N.V. (translated into English as Royal Philips Electronics) (Philips)
- Lite-On IT Corporation (Lite-On)
- Philips & Lite-On Digital Solutions Corp. and Philips & Lite-On Digital Solutions USA, Inc. (collectively, PLDS, a joint venture between Philips and Lite-On)
- Sony Corp. (Sony)
- NEC Corporation (NEC)
- Sony NEC Optiarc, Inc., Sony Optiarc, Inc., Sony Optiarc America, Inc. (collectively, Sony Optiarc)
- Samsung Electronics Co., Ltd. and Samsung Semiconductor, Inc. (collectively, Samsung)
- Toshiba Corp.

- Toshiba Samsung Storage Technology Corp. and Toshiba Samsung Storage Technology Corp. Korea (collectively, TSST)
- Panasonic Corporation and Panasonic Corporation of North America, formerly known as Matsushita Electric Corporation of America (collectively, Panasonic)
- TEAC Corporation and TEAC America Inc. (collectively, Teac)
- Quanta Storage America, Inc. and Quanta Storage Inc. (collectively, Quanta)
- Pioneer Electronics (USA) Inc., Pioneer North America, Inc., Pioneer Corporation, and Pioneer High Fidelity Taiwan Co., Ltd. (collectively, Pioneer)

C. Summary of Conclusions

16. I have been asked by counsel for the indirect purchaser plaintiffs to calculate overcharges on the indirect purchaser class's purchase of ODDs and computers containing ODDs during the class period. Counsel asked me to calculate the overcharge on any particular transaction as the quantity purchased times the difference between the price actually paid and the estimated price that would have been paid but for the collusive conspiracy. I estimate that, over the class period, damages to U.S. indirect purchasers from the defendants' explicit collusion amounted to \$2.501 billion dollars, or about 20.9% of actual defendant U.S. indirect sales of ODD drive types for which statistically significant collusive impact can be shown during the class period. Additionally, I was directed by counsel to determine the portion of the economic harm to indirect purchasers in a subset of states and customer segments that I am told is legally recoverable. That portion amounted to \$1.074 billion. This analysis is supported by multiple complementary studies:

- a. A cointegration study, utilizing a dataset of transactional data from ODD producers accounting for 86 percent of industry sales, confirms the existence of equilibrium relationships among prices for DVD-RW, DVD-ROM, and Combo drives sold to different purchaser groups. This implies that successful collusion would have had market-wide impact for all direct purchasers.
- b. A Granger causality analysis studying this same dataset establishes that collusive increases in ODD prices for Dell and HP drive purchases would have created collateral impacts on purchase prices for other customers of these drives.
- c. A multivariate regression model of the overcharge—price-elevating collusive impact—for distinct types of drives sold to distinct groups of purchasers distinguishes between periods of time, types of ODD drives, and groups of purchasers where statistical tests show conclusive evidence of impact, and periods of time, types of drives, and groups of purchasers where evidence is less conclusive. The results from this model are economically plausible, and show statistically significant impacts on all purchasers of DVD-RWs, DVD-ROMs, and Combo drives during some portions of the class period.

- d. Empirical analysis of actual retailer sales practices establishes that discounts and price reductions are commonly used to stimulate sales of even the most expensive computer models.
- e. Analysis of empirical evidence shows that, where retailers use target price points for initial pricing of new pre-configured computer models, a negotiated process with computer Original Equipment Manufacturers (“OEMs”) establishes a set of components and features for the new computer models that is sensitive to component costs and is designed to hit a specific target cost for both the computer manufacturers costs and the retailer’s computer procurement cost from the OEM. As a consequence, increases or decreases in computer component costs trigger removal or addition of higher-quality features in the design of new pre-configured computer models.
- f. Empirical analyses show that quality of all components was increasing while prices were declining, at double digit annual rates, in the computer industry over the class period. This means that new computer models offered at a given price point are generally of higher quality, offering new features and functionality, compared with models previously sold at that same price. This implies that changes in costs for computer components will trigger quality changes in new computers sold at given price points, in addition to affecting prices for older models with fixed configurations whose component prices have changed.
- g. Empirical evidence shows that an ODD was considered a key component of a personal computer by OEMs during the class period, accounting for a relatively large share of a computer’s cost, and was therefore an economically worthwhile target for collusion by the defendants.
- h. Hedonic analyses of initial procurement prices by retailers for new pre-configured computer models are presented. Controlling for variation in computer characteristics across these new computer models, these hedonic models show that pass-through of component costs into the “baked in” initial price for a new pre-configured computer model can be measured. This analysis is performed on initial sales prices for computer models manufactured by HP, Dell, Acer, and Toshiba, indicating a “baked-in” pass-through of component cost changes into price that is generally close to, or exceeds, 100 percent.
- i. In the case of HP, I perform an “end-to-end” “baked-in” hedonic pass-through analysis, linking HP manufacturing cost and computer characteristics to initial consumer purchase price at retailer Best Buy. Conceptually, the rate estimated here is the product of the OEM to Best Buy pass-through rate, times the Best Buy to final purchaser pass-through rate. While controlling for computer characteristics, this hedonic study also finds “baked-in” pass-through rates close to, or exceeding, 100 percent.
- j. Hedonic analyses of initial, final purchaser prices for new pre-configured computer models at retailers are also performed. Controlling for variation in computer characteristics across these new computer models, these hedonic models show that

- pass-through of procurement cost into the “baked in” initial purchaser price for a new pre-configured computer model can be measured. This analysis is performed on initial sales prices for computer models sold by retailers Best Buy, Costco, PC Connection, and MEI, indicating a “baked-in” pass-through of costs into price that is generally close to, or exceeds, 100 percent.
- k. Analysis of the response of Dell configure-to-order (CTO) computer prices to changes in component costs shows pass-through of costs into direct retail prices for CTO computers to consumers that are generally near, or exceed, 100 percent.
 - l. Multiple studies of the effect of continuing procurement cost changes on end purchaser prices for existing models of pre-configured computers sold by OEMs, distributors, and retailers have been undertaken using the fixed-effects regression method. Pass-through rates of continuing cost changes are consistently near or exceed 100 percent, confirming hedonic pass-through rates.
 - m. A statistical study utilizing quantile regression methods determines whether pass-through of continuing cost changes into price for high-quality computers sold at high prices is likely to be very different from pass-through of continuing cost into price for lower quality, inexpensive computers. This quantile regression study, using Best Buy data, determines that estimated pass-through rates for the types of desktop and laptop computers sold at both high and low price points in all cases exceed 100 percent and in almost all cases are statistically significant.
 - n. A summary of all the above pass-through studies demonstrates a consistent, pervasive pattern of statistically significant pass-through rates near or exceeding 100 percent for OEMs and through all retail and distributor sales channels.

II. MARKET STRUCTURE IN THE ODD INDUSTRY

17. Typically, the characteristics of an industry, ranging from the nature of the product to the conditions affecting supply and demand, play important roles in economic analyses of collusive conduct. In my previous reports, I have performed a detailed investigation of the ODD industry and found evidence of explicitly collusive behavior by the defendants, and I incorporate those findings by reference.⁴ I understand that the report of Dr. Luis Cabral describes the industry and functioning of the cartel at considerable length. Rather than covering the same ground, I emphasize three factors below: the concentration amongst ODD manufacturers, the fact that ODDs are standardized “commodity” products with a high degree of substitutability in both production and demand, and pricing practices and relationships within the ODD industry.

A. Concentration Among Sellers

18. It is easier to organize and maintain price-fixing collusion where a small number of firms dominate the market. With smaller numbers of firms in the market, any potential gains

⁴ See, e.g., Flamm I, ¶¶ 26-105.

from defecting from an industry-wide cartel are also reduced.⁵ In this industry, the defendants, who all formed and joined patent pools controlling essential patents needed to sell ODDs in global markets, further reduced competition by employing a patent pool licensing royalty structure that effectively worked to squeeze out non-pool members over time.⁶

19. As manufacturing costs predictably declined over time (commonplace in this and other high-tech electronics industries), and prices at least initially followed costs, non-pool members were squeezed out of the business by the increasingly burdensome royalty costs. **Table 1**, below, shows that non-pool-affiliated members went from accounting for more than half of industry output, in 2001, to only five percent of industry output in 2008.

⁵ See e.g., Massimo Motta, *Competition Policy: Theory and Practice* 142-43, 160-62 (Cambridge University Press 2004), for a useful summary of the literature.

⁶ Kenneth Flamm, *A Tale of Two Standards: Patent Pools and Innovation in the Optical Disk Drive Industry*, No. w18931. National Bureau of Economic Research (2013). Licenses to the DVD patent pools were set as a fixed per-unit royalty, which had the effect of steadily increasing the pool licensing fee as a share of product cost and price as manufacturing costs declined over time. Pool members—like the defendants—appear not to have been required to pay the same license fees into the patent pool.

Table 1: Herfindahl-Hirschman Index (HHI) of ODD Market Concentration

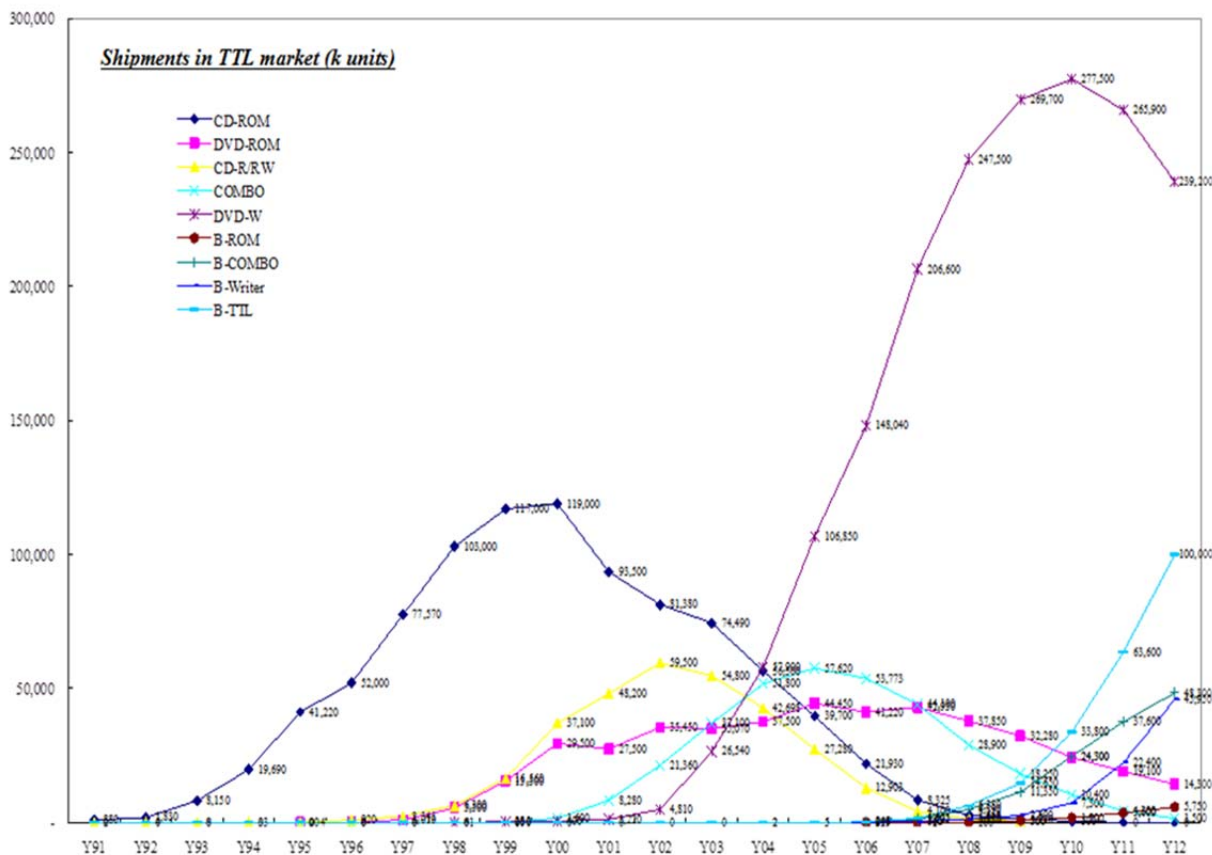
Entity Name			Market Share (%) ¹						
2001	2003	2005	2001	2003	2004	2005	2006	2007	2008
Hitachi / LG	Hitachi / LG	Hitachi / LG	18.8	24.0	28.0	25.6	26.0	30.8	27.9
Samsung	TSST	TSST	13.1	19.0	18.0	21.8	18.9	24.2	23.6
Toshiba			5.3						
LiteOn	LiteOn	LiteOn (PLDS)	10.6	16.0	16.0	26.3	16.9	11.5	14.5
BenQ	PBDS		5.1	7.0	6.0				
Philips			3.4						
Sony	Sony	Sony NEC Optiarc	2.4			7.1	9.9	9.3	15.6
NEC	NEC		3.3		4.0				
Pioneer			1.9		4.0	4.4	5.7	6.0	6.3
MKE / Panasonic	MKE / Panasonic		4.5	5.0	6.0	8.4	9.1	8.6	7.0
Teac			6.4	3.0					
BTC	BTC		4.7	4.0					
AOpen			2.4						
Mitsumi Electric			2.0						
All Others			16.1	22.0	18.0	6.4	13.5	9.6	5.1
			2001	2003	2004	2005	2006	2007	2008
		HHI upper bound	847	1358	1540	1990	1609	1921	1910
		HHI lower bound	816	1292	1468	1962	1532	1863	1878
Market Share of DVD Pool Members, Affiliates (%)²			49.4	55.0	66.0	93.6	86.5	90.4	94.9
Market Share of Non-Pool Affiliated Members (%)³			50.6	45.0	34.0	6.4	13.5	9.6	5.1

Sources/Notes:

1. See Kenneth Flamm, *A Tale of Two Standards: Patent Pools and Innovation in the Optical Disk Drive Industry*, Table 2, No. w18931. National Bureau of Economic Research (2013).
2. In 2001, DVD patent pool members/affiliates included Hitachi, LG, Samsung, Toshiba, Philips, Sony, MKE/Panasonic, and Pioneer. For 2003 and 2004, PBDS is considered part of this group, as is PLDS from 2005 forward.
3. Equal to 100 percent minus Market Share of DVD Pool Members, Affiliates (%).

20. Data produced by the defendants show that TSR's 2007 projections of the future, shown in **Figure 1**, were far too optimistic about the future prospects for Blu-Ray drives, perhaps because prices for these more advanced drives declined slowly over the class period.

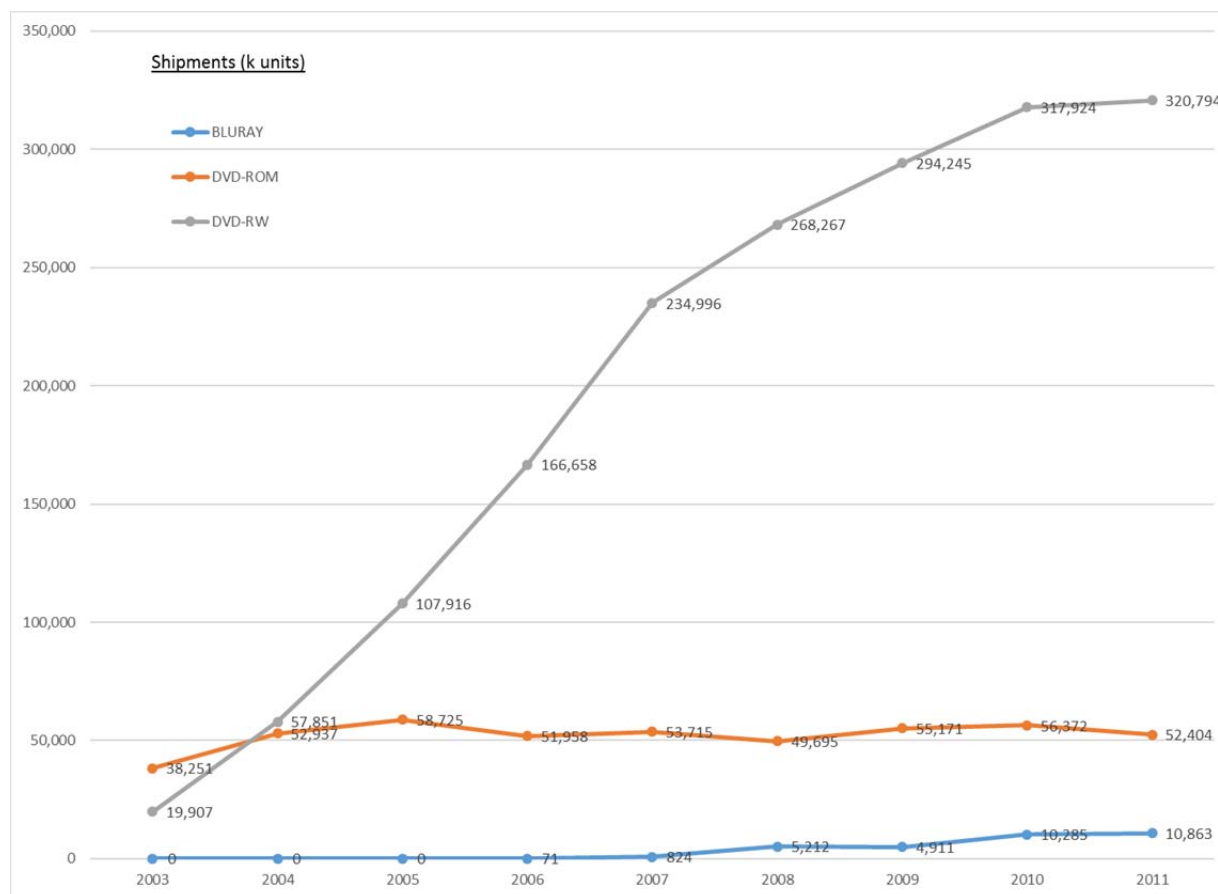
Figure 1: TSR Projections Overestimate Blu-Ray Success



Source: TSR, "Blu-ray/HD DVD Market Report (IT Drive)," January 2008.⁷

21. **Figure 2** depicts actual shipments of DVD-RW, DVD-ROM, and Blu-Ray drives by the defendants. It is clear that shipments of DVD-RW drives dominated industry sales after 2004.

⁷ ODDCIV-000093863 at 12.

Figure 2: Estimated Global Shipments of ODDs by Unit Type

Source: Defendant data.

22. Before this transition (while DVD unit prices were still relatively high and before DVD royalties had become as burdensome for patent pool outsiders as they were to become in just five years), the core ODD producers who had developed the new format drives' technology began to team up with low-cost Asian manufacturing partners.

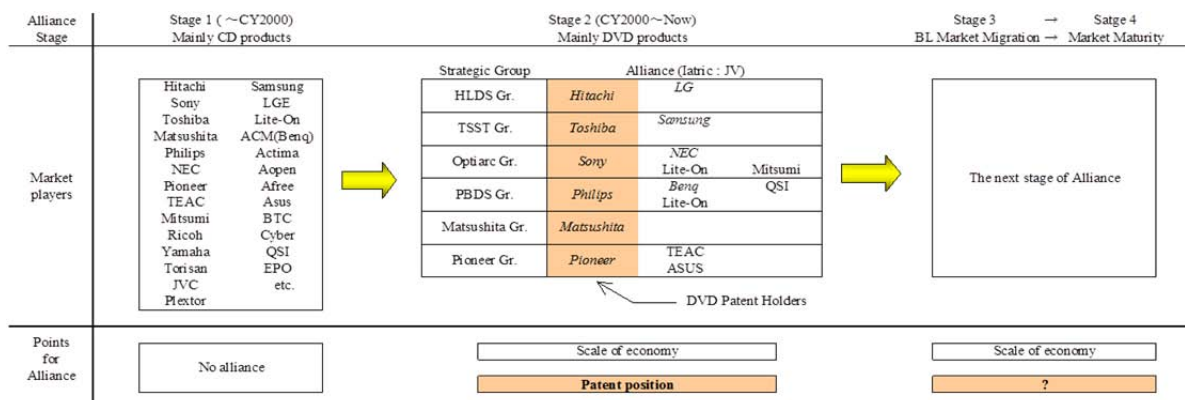
23. The results were joint ventures and arms-length contractor alliances that joined older, more technologically advanced firms with membership in the patent pools to newer companies with a lower-cost manufacturing base. The joint ventures were structured with 51 percent ownership by patent pool members, making the joint venture a controlled subsidiary of a patent pool parent, enjoying the benefits of the established parents' licenses and cross-licenses with pool members and others. This relieved the joint ventures of burdensome obligations to pay royalties to the DVD patent pools in which the controlling parent participated or to other owners of essential patents who had already granted licenses or cross-licenses to the controlling parent company through the pool.

24. The arms-length contractor alliances had the low-cost contractors producing drives on behalf of a patent pool member. Because the drives were produced on a "have made" basis for a patent pool member, the pool member and not the contractor was responsible for any

royalties, and the contractor's output ultimately enjoyed the same privileges of reduced or minimal royalties as it would have if the pool member had undertaken the physical production.

25. **Figure 3** sketches out the development of these joint venture and contractor relationships over the 2001-2006 period:

Figure 3: ODD Supplier Relationships, 2001-2006



Source: TSR, 2006 Optical Disc Marketing Analysis, July 2006. Italics denote JV partners. Other alliance relationships are non-controlled external contractors.⁸

26. Japanese consulting firm TSR characterized these developments as follows:

During the period of 5-6 years between late 2000 and today, ODD makers have aggressively repeated the business merger and cooperation. Triggered by the establishment of HLDS [in 2001], the alliance between Drive makers, which has never ever existed before, has come to receive recognition as an important strategic option. What caused such a trend was not <the strengthening of competitiveness by scale economy> to be spoken generally, but the severe <issue of DVD patent>, which appeared to the surface, as DVD became the center of the market. In fact, in the view of the current makers' composition which can be categorized into 6 sections, it is mainly made up of DVD patent holders. This was <the pivot of restructuring> or <Alliance Driver>.

Will business merger and market restructuring happen in the future too? This is the common concern of the entry makers in this market. According to the forecast of TSR, although such a trend would continue in the future, the future restructuring would be different from that of the past by nature. That is, the pivot of restructuring would be different. In the present situation where only the makers in high positions of ODD-related patents remain, further restructuring with the pivot of this point would be meaningless.⁹

⁸ HAW00685839.zip, 01.Summary.doc at 8.

⁹ TSR, 2006 Optical Disc Marketing Analysis, July 2006, HAW00685839.zip, 01.Summary.doc at 8.

27. The message clearly was that the now dominant role of DVD royalties and patent ownership in the ODD industry severely limited future prospects for the kind of easy entry—and heightened competition from new entrants—seen previously with CD drives.

28. The development of the relationships cataloged in **Figure 3** began in 2000, when Japanese ODD producer Hitachi merged its optical disk operations with LG Electronics of Korea. The joint venture, Hitachi LG Data Systems (HLDS), was confined strictly to design, development, and marketing.¹⁰ Actual manufacturing was contracted out to the parents and their subcontractors. The joint venture also had royalty-free access to the patents of the parents. Hitachi effectively controlled the operation, through both its ownership and its control of key technologies. Indeed, Hitachi's 51 percent ownership of the joint venture was absolutely critical to its success, since its position as a Hitachi affiliate gave it access to the benefits of Hitachi's cross-licenses with other ODD patent holders and Hitachi's membership in one of the two DVD patent pools.

29. As a Japanese study of the industry concluded:

It is very important for the industry of the catch-up countries to understand the reason why the percentage of Hitachi's investment to HLDS is 51%, and why Mitsubishi's investment to Digitek [a similar JV between Mitsubishi and Funai Electric] is 51%. The 51% from Hitachi means that HLDS is consolidated subsidiary company of Hitachi and thus all the patent royalty issues are automatically handled by Hitachi. It is said that the actual royalty fee of the DVD business has been significantly decreased because Hitachi has established patent claim to rank with other patent holders, and moreover Hitachi has many cross-licensed partner firms in the world.¹¹

30. The strategy was a success. Japanese authors Ogawa, Shintaku, and Yoshimoto note:

¹⁰ Indirect Purchaser Plaintiffs' Third Amended Class Action Complaint, ¶ 178, ECF No. 832. *See also* Objections and Responses of Defendants Hitachi-LG Data Storage and Hitachi-LG Data Storage Korea, Inc.'s Amended Supplemental Response to Plaintiffs' Joint Notice of Deposition Pursuant to Rule 30(b)(6) at 7 ("Subject to and without waiving the foregoing General and Specific Objections, the HLDS Defendants state that HLDS was created to design and market ODDs globally to original equipment manufacturers ("OEMs") that incorporate the ODDs into their products, as set forth in the Joint Venture Agreement ("JVA") between Hitachi, Ltd. ("Hitachi") and LG Electronics, Inc. ("LGE") (which are HLDS's shareholders). See JVA Article 3.1, HLDS_CIV2408019-117... HLDS Korea was created "to complement and enhance" HLDS's business. See JVA Article 3.2.1.").

Objections and Responses of Defendants Hitachi-LG Data Storage and Hitachi-LG Data Storage Korea, Inc.'s Amended Supplemental Response to Plaintiffs' Joint Notice of Deposition Pursuant to Rule 30(b)(6) at 8 ("The HLDS Defendants did not manufacture ODDs during the Specific Period. Rather, as set forth in Article 3.5 of the JVA, the HLDS Defendants jointly entered into Product Subcontract Master Agreements ("PSMAs") with Hitachi and LGE, in order to have Hitachi, LGE, and/or their affiliates manufacture ODDs for HLDS.").

¹¹ Koichi Ogawa, Shintaku, Junjiro Shintaku & Tetsuo Yoshimoto, *Architecture-based Advantage of Firms and Nations: New Global Alliance between Japan and Catch-up Countries* at 14, Discussion Paper Series Manufacturing Management Research Center (September 2005), available at http://merc.e.u-tokyo.ac.jp/mmrc/dp/pdf/MMRC48_2005.pdf.

Since 2003, only three years after the joint venture company has started, HLDS has turned into one of the most profitable subsidiary companies of Hitachi group. It has been said that without moving on to the alliance, Hitachi would have been forced to withdraw from the optical storage industry. The joint venture company between Mitsubishi Electric and Funai Electric also shows similar success story that Funai is exceptionally a profitable firm among the DVD suppliers in Japan because Mitsubishi Electric is the majority (51%) among the investors and is one of the major license holders in the DVD Forum.¹²

(In the case of HLDS, LG was later allowed to join the patent pool.)

31. Others quickly emulated this model. In 2001, Japan's JVC, another patent pool member, formed a similar 51/49 percent joint venture with Taiwan's Lite-On. Patent pool member JVC, again, held the controlling interest.¹³

32. In early 2003, Taiwanese ODD producer BenQ and Philips formed a joint venture, Philips BenQ Digital Storage (PBDS). The jointly owned company would develop, design, and market ODDs; all manufacturing would be contracted out to BenQ.¹⁴

33. In 2004, ODD producers Samsung Electronics and Toshiba agreed to join their ODD operations into a single venture, Toshiba Samsung Storage Technology (TSST). [REDACTED]

34. In 2006, ODD producers NEC and Sony announced an agreement to merge all ODD activities of their two companies in a joint venture, Sony NEC Optiarc. The new joint

¹² *Id.* at 15.

¹³ See Junjiro Shintaku, Koichi Ogawa & Tetsuo Yoshimoto, *Architecture-based Approaches to International Standardization and Evolution of Business Models* at 12, Manufacturing Management Research Center, University of Tokyo, Working Paper MMRC-F-96 (September 2006); Indirect Purchaser Plaintiffs' Third Amended Class Action Complaint, ¶ 185, ECF No. 832.

¹⁴ See ODD-BENQ-00000023: Joint Venture Agreement by and between BenQ Corporation and Koninklijke Philips Electronics N.V., dated April 25, 2003.

Objections and Responses of the BENQ Defendants to Notice of Rule 30(b)(6) Deposition, at 12-13 ("With regard to ODDs, the former BenQ was itself the 'contract manufacturer' for the PBDS joint venture during the Relevant Period. The joint venture agreement providing details of this relationship has been produced at ODD-BENQ-00000023- ODD-BENQ-00000049. The former BenQ manufactured ODDs sold by the Philips sales organization pursuant to this agreement and the other agreements referenced therein (Memorandum of Understanding, produced at ODD-BENQ-00061085 – ODD-BENQ-00061109; Assembly Services Agreement, produced at ODD-BENQ-00061028 – ODD-BENQ-00061083).").

¹⁵ http://www.investkorea.org/InvestKoreaWar/work/ik/eng/bo/print_added.jsp?bno=805090011&sort_num=29; Objections and Responses to Plaintiffs' Joint Notice of Deposition of the Toshiba Defendant Family Pursuant to Fed. R. Civ. P. 30(b)(6) at 6 ("Subject to and without waiving the foregoing General and Specific objections: On or about January 13, 2004, Toshiba Corp. and Samsung Electronics Co., Ltd. ('SEC') entered into a Business Integration Agreement ('BIA')). (See T-ODD-00000184, *et seq.*). Pursuant to the terms of the BIA, TSST was created as a Japanese stock corporation (*kabushiki kaisha*), of which Toshiba owns a 51% share of the voting common stock of TSST and SEC owns the other 49%. (Id. at Articles 2.1, 3.1.3). The BIA also established TSSTK, a Korean stock corporation (*chusik hoesa*), which began operations on April 1, 2004. (See *id.* at Article 2.1, 3.1.2).").

venture was to undertake all development, design, marketing, and sales related to ODDs. All manufacturing (except a small amount of manufacturing of magneto-optical drives in Sony's Minidisc division) was to be subcontracted out to third parties.¹⁶

35. In late 2008, NEC sold off its interest in Optiarc to Sony, and Optiarc finally became a wholly owned Sony subsidiary.¹⁷

36. In early 2006, Taiwanese ODD producer Lite-On purchased BenQ's ODD production facilities in China and took over BenQ's manufacturing ties to PBDS. BenQ exited the ODD contract manufacturing business. In 2007, BenQ sold its interest in PBDS to Lite-On and, like many others, completely exited the ODD business. The joint venture with Philips was renamed PLDS (with Lite-On's "L" replacing BenQ's "B").¹⁸

37. Most of the dozens of Taiwanese, Korean, and Japanese firms that had entered the ODD business with the CD boom in the 1990s exited after the millennium. Those that remained—like Quanta, Asus, TEAC, Mitsumi—survived by becoming electronics manufacturing contractors for the larger and more powerful members of the DVD patent pools. In a 2009 court case, Quanta's attorney made this point vividly: "Quanta Storage sells almost no disc drives under its own brand name. It assembles the disc drives for Sony Optiarc. Now, Sony Optiarc helps Quanta Storage design the disc drives. Sony Optiarc puts its brand name on the disc drive and then Sony Optiarc sells the disc drive to brand name computer companies, companies that you are likely familiar with—HP, Apple, Dell, for example."¹⁹

¹⁶ See http://ec.europa.eu/competition/mergers/cases/decisions/m4139_20060331_20310_en.pdf, p. 5; Objections and Responses to Plaintiffs' Amended Joint Notice of Deposition of the Sony Defendant Family Pursuant to Federal Rule of Civil Procedure 30(b)(6) at 5-6 ("From April 3, 2006 through January 1, 2010, Sony Optiarc Inc. was the legal entity responsible for the worldwide ODD business...SOI designed, developed, and supplied ODDs incorporated in, or sold as accessories to, personal computers. SOI sold ODDs to various sales companies worldwide, including SOA. SOI did not have and has not had any involvement with any finished-products containing ODDs except for certain personal computer and camcorder accessory products... SOI was formed as a stock company (as Sony-NEC Optiarc Inc.) under the laws of Japan in April 2006. (See SOA_CIV_00008872-8964.) Sony Corporation acquired 55 percent of the voting capital shares of SOI and NEC Corporation acquired the remaining 45 percent.").

¹⁷ Objections and Responses to Plaintiffs' Amended Joint Notice of Deposition of the Sony Defendant Family Pursuant to Federal Rule of Civil Procedure 30(b)(6) at 6 ("On December 5, 2008, Sony Corporation acquired all of NEC Corporation's shares in SOI. SOI then changed its name from Sony NEC Optiarc Inc. to Sony Optiarc Inc. (See SOA_CIV_00008976-77.)").

¹⁸ See http://ec.europa.eu/competition/mergers/cases/decisions/m4502_20070216_20310_en.pdf; "In 2007, Lite-On IT acquired BenQ's shares in PBDS. As a result, Philips and Lite-On IT became partners. Their joint venture, formed in March 2007, was named Philips Lite-On Digital Solutions ("PLDS"). Lite-On IT owns a 49 percent interest in PLDS, with Philips holding the remaining 51 percent interest." Defendant Lite-On It's Narrative Response to Plaintiffs' Joint Notice of 30(b)(6) Deposition at 10.

¹⁹ ¹⁹ Trial Tr., Vol. 1-C at 20, *Ricoh Co., Ltd. v. Quanta Computer Inc., et al.*, No. 06-CV-462-BBC (W.D. Wis. Nov. 9, 2009) (First Day of Trial, Nov. 9, 2009), available at http://thepriorart.typepad.com/the_prior_art/2010/04/446.transcript.1C.pdf.

38. Documents produced in this case make it clear that these joint venture and contracting relationships were the occasion for exchanges of sensitive and confidential information about participants' and others' future pricing and production plans.²⁰

B. Standardized Products with a High Degree of Substitutability

39. ODD drives are standardized products with a high degree of substitutability for drives made by other ODD drive producers. Substitutability among products facilitates collusion because it is easier for the conspirators to compare their products, to reach and maintain

²⁰ See ODDCIV-005141727 – Sony and Lite-On have an “alliance” or manufacturing relationship during this period. In early November 2005, Asus sends two separate RFQs to Sony Japan and Lite-On for HH DVD-RW. To Asus, Sony Japan and Lite-On are separate suppliers on the vendor list. Toshihiko Doro (Sony Japan) initially contacts Jimmy Lu (Lite-On) to see if Lite-On can offer a good price to Sony making this product part of the “alliance”. It appears that on November 10, 2008, Doro and Charlie Tseng (Lite-On) had a discussion and agreed not to compete. Lite-On was surprised when Sony Japan had quoted a lower price than Lite-On. Lite-On then asked Sony to not get involved in Asustek's HH business.

HLDS_CIV1882842 – HLDS spoke with LiteOn and QSI about competitor information, primarily concerning the LiteOn-BenQ merger. Included is information about the Sony-Lite-On relationship and Sony-NEC JV. Hyun Chul Son writes:

“Relationship with Sony/NEC

Lite-on's position is that they did not need to explain merger to Sony in advance because Sony-Lite-on relationship is not JV. Lite-on informed this merger to Sony just one day before announcement. Just like Sony did not notice their merger with NEC to Lite-on in advance. **According to Lite-on, Sony & NEC still operate independently even after launch Sony/NEC officially.”

HC Son's opinion on this development includes, “Lite-on's production volume reduced a lot in Q1 and their profit becomes worse and prospect in the future is not so bright. Besides, their relationship with Sony is very unstable. So, I think it is necessary for Lite-on to become big enough not to be disregarded by Sony/NEC or any PC makers.”

ODDCIV-000070184: JC Lim has RFQ TAM and pricing information from Sony Optiarc and will attempt to corroborate with TSST. He writes, “I manage to talked to Sony Optiarc and he stated that their RFQ (i.e Slim 12.7mm SATA Slot DVDRW) is ~\$43 for Q1. They are the 2nd source awarded after TSST (i.e 1st source). Sony believes that TSST has lower price compare to them. Sony believes that TSST Q1 pricing is ~\$38-\$39 for Q1. No confirmation on TSST pricing at this time period.”

QUANTA_HAW_00033242: Sony and QSI have an “alliance” relationship during this period. Kyotaro Imamura (Sony Taiwan) tells Haw Chen (QSI) that Optiarc has offered \$24.90 for 12.7mm HH DVD-RW (model AD 7590S) to Acer. The base price is \$25.40 and \$0.5 for rebate. At the end of the email, he states:

“I feel this is strange but, they are 飢了... (my translation: they are hungry...)”

Please DO NOT react to this price, as our AD7560/80 portion is our mainstream for Acer.”

It appears that AD7560 and AD 7580 are “alliance” products but not AD7590S.

ODDCIV-003863806: PLDS and TEAC are in an “alliance” or manufacturing relationship during this period. Ted Oikawa (TEAC) believes that PLDS and TEAC are both approaching Samsung about S-Multi Slot Load Slim Drive and writes to Charles Tseng (PLDS), “We are told that their target price is \$27.00 and PLDS are trying to reach their target price. (Very aggressive price) I do not want to make unnecessary price war between us. What kind of price did you offer to them? Because I do not want to give them lower price than your offered price.” Tseng denies such incident and asks YM Chang (PLDS) to provide additional info to Oikawa. Chang indicates that Samsung did request for a quote but PLDS did not provide one and that Samsung might call PLDS again. Oikawa then writes, “... I believe that such a information exchange shall be a very good idea between us continuously. Pleas [sic] keep in touch.”

agreement on prices, and to threaten potential cartel defectors with the ability to force their product prices down.

1. ODD Drives Were Substitutable in Production

40. Different ODD drives are substitutable in production and are manufactured using the same basic production processes.²¹ They can be—and are—produced on the same production lines. An ODD manufacturing line often produces a mix of product types, which share most of the same cost components. If one category of drive product were to become significantly more profitable than another, there would be an incentive for producers to shift output to that category.

41. Thus, if the price of, say, a CD-RW drive were to rise while other drive prices held constant, drive-using equipment producers could simply upgrade their output of notebook and desktop computers to make use of Combo units to accommodate the many consumers who would be perfectly willing to buy a more capable computer at the same or only slightly higher

²¹ In their narrative responses to a deposition notice pursuant to Federal Rule of Civil Procedure 30(b)(6), certain defendants have responded as follows:

“Subject to and without waiver of objections, the BenQ Defendants state that costs and time required for changing production between ODDs of different specifications would vary, depending upon the differences between those specifications. The only major difference between ODDs would be the speed of the product, and the speed was decided by key components. As a system integrator, the former BenQ only assembled components, so likely the time required for switching production between product A and product B would be minimal. The cost difference would be the difference between material costs, particularly those of key components.” Objections and Responses of Defendants BENQ Corporation and BENQ America Corp. to Plaintiffs’ Notice of Rule 30(b)(6) Deposition at 24.

“The products manufactured at Quanta’s Shanghai facility are the slim drive, ultra slim drive and slot-load configurations. Each of these forms of products can be produced on each of the production lines at the Shanghai facility... The products manufactured at Quanta’s Changshu facility are half-height and tray type drive configurations. Each of these forms of ODDs can be produced on each of the 12 production lines at the Changshu facility... The number of purchase orders has been and continues to be the primary factor affecting Quanta’s decision to switch production on any particular production line from one product having one specification to another product having a different specification. Similarly, the form of a product is typically the primary factor that affects the cost and time required to switch production from one product to another product on a particular production line. In general, the time required to switch from one product to another product on any particular production line is about 1-2 days.” Supplemental Objections and Narrative Responses of Quanta Storage Inc. and Quanta Storage America, Inc. to Plaintiffs’ Joint Notice of 30(b)(6) Deposition at 12-14.

“Generally, however, it is not difficult to switch a product line from one model to a derivative model with minimal changes. Once Lite-On IT’s manufacturing team has purchased the new apparatus required for the model changes, if any, the time to change out the line was typically only a day or two. The equipment expense and labor costs for these changes would be relatively minor.” Lite-On goes on to note that it would be somewhat more time-consuming to switch from one type of drive and form factor an entirely different drive type and form factor, but includes its production planning decision process in making this evaluation: “It is more time consuming to switch a production line from one ODD type to an entirely different ODD (e.g., from Half-Height CDROM to Slim BD Combo). Typically this process took approximately six months, from the initial internal evaluation of production needs through readying the line for production. On average, the cost to switch lines between two unrelated models ranged from 100,000 USD to 200,000 USD, depending on the specifications of the models involved.” Defendant Lite-On It Corporation’s Narrative Response to Plaintiffs’ Joint Notice of Deposition Pursuant to Federal Rule of Civil Procedure 30(b)(6) at 34.

ODDCIV-001157259: HP requests drive change to one with “bezel print color from 422C (currently used for 6216) to 424C (carbonite material used only by bPC)”; Philips requests and receives a waiver from HP for BenQ to produce part of HP’s requested amount via substituting with the earlier produced model, with HP’s Ming Wong writing, “Anyway, it is OK to accept the initial 12K production w/P422C as is, then phase in to P424C ASAP.”

price.²² Drive producers could quickly shift to different ODD unit types on their production lines to meet changes in the composition of demand, as noted earlier.

42. ODD drive producers shifted their production frequently amongst the different categories of drives.²³ The substitutability in production extended to substitution between different size form factors and types of drives.

43. Defendants Philips, BenQ, and Lite-On emphasized the ease of supply-side substitutability among ODDs in their submissions to the European Commission when they merged in 2007:

Furthermore, the parties consider that the overall market for PC ODDs can potentially be segmented by type or by ODD family. With respect to the type of PC in which ODDs are built-in, a distinction can be made between desktop PCs housing half-height ODDs and laptops/notebooks which use slim ODDs. However, slim ODDs can also be found in desktop PCs. As regards a subdivision by ODD family, this would consist of be CD-ROM, DVD-ROM, CD-Read/Write, COMBO (CD-Read/Write and DVD-read), DVD-Read/Write and the next generation of technology that is Blu-ray and HD-DVD. Technical standards set the physical design in any of these sub-categories and PC (OEM) manufacturers set their standards further. Hence, a high degree of supply-side substitutability exists across PC ODDs.²⁴

2. Manufacturers of Products Sold to Class Members Could Substitute Products from Different Drive Producers and with Different Specifications

44. ODD drives were generally sold to multiple customers. For example, over 90% of PLDS ODD sales were models sold to multiple customers.²⁵

45. A large OEM customer typically created and circulated to multiple producers a “request for quote,” or RFQ, soliciting quotes on an ODD drive that exactly met the customer’s requirements. Producers might respond with a single or multiple model design(s) that they already produced. If they did not have a model available that met all the requirements exactly, they could offer another model at a somewhat lower price than the model that exactly conformed

²² **ODDCIV-001022320**: Philips can easily convert DVD ROMs to CD ROMs. According to Philips, Dell’s plan is to have a drive capable for DVD ROM support but able to be “downgraded” to CD ROM when necessary, via FW, to save on royalties associated with DVD ROM. Dell wants to buy DVD ROM at a cost that is “at parity with CD-ROM” and it “may accept a \$1-2 delta but no more.” Dell prefers 16X but indicates that 12X speed may be fine if Philips is able to offer a better price.

²³ See **HLDS_CIV1873230**: HLDS presentation regarding the success of the joint venture, slide re: “V. Performance of J/V”, includes production efficiency and substitutability as a benefit of forming the JV, “Improved production efficiency (Production Q’ty per day) * 2000 : CD-ROM 4,500 sets / per line / 8 hr shift * 2005 : DVD-W 7,500 sets / per line / 8 hr shift; Exact same production lines at each site => Easy to shift production & Maximize the capacity.”

²⁴ European Commission, Case No COMP/M.4502 -LITE-ON / PBDS, Feb. 16, 2007 at 9, *available at* http://ec.europa.eu/competition/mergers/cases/decisions/m4502_20070216_20310_en.pdf.

²⁵ 92.82% of PLDS’s sales and 90.03% of its units sold were for models sold to more than one customer.

to all the requirements.²⁶ Indeed, customers encouraged defendants to substitute a model that met most, but not all, standards exactly, if it could be offered at a lower price.²⁷ For example, [REDACTED]

Thus, customer specifications were not excessively rigid and could be relaxed.

46. There are documents showing customers were able to substitute manufacturers' available drives when their preferred specifications were unavailable.²⁹ Slim ODD drives designed primarily for use in notebook computers could be used in other applications, like desktop computers.³⁰ There would typically be little need to sell drives manufactured for one

²⁶ **SOA_DOJ_1_1282387; ODDCIV-001148495.** This is a Philips internal email mentioning royalty adjustments if they turn off the DVD-ROM capabilities.

²⁷ See **SOA_DOJ_1_1282387.**

²⁸ [REDACTED]

See also **ODDCIV-001148495.**

²⁹ **ODDCIV-000101237.** This document contains minutes from a meeting between JC Lim and Andrew (presumably Andrew Chiu of HP) on March 4, 2008. They discuss issues surrounding Slim 12.7mm SATA BDCCombo and one of the issues is BDCCombo key component shortage in Q3/Q4. It appears that Andrew Chiu is not concerned about it. In fact, JC Lim writes: "Andrew's opinion is that IF they do not have BDCCombo, there is always a substitute to BDCCombo such as DVDRW or other ODDs. This is not like the case of notebook battery [sic] where the shortage of battery [sic] is not substitute and this will definitely [sic] impact to HP notebook production cause [sic] battery has no replacement."

QUANTA_HAW_00023216: QSI is facing a OPU shortage for AD-7580A and may not be able to meet Dell's forecast for August and September. As such, Shu-ming Tzeng(QSI) writes to Alex Oon (Dell) informing him that she has asked "other customers to divert to other models instead of AD-7580A." She also provides him an updated supply plan. Dell appreciates the advance notice and asks QSI to focus supply on Dmod instead of Spears. Alex Oon writes: "I am looking to have at least 50k of your Sept supply for Spears to move to Dmod and maybe 40k from spears to Dmod in Oct."

ODDCIV-003647950: This is a PLDS Sales Review Action Tracker spreadsheet, with an entry listed for week 633 under Dell account indicating that PLDS could replace Slim DVD-RW with Slim Combo/DVD-ROM after being awarded Slim DVD-RW.

HLDS_CIV2207778: HP asks HLDS for the EOL date for JBC1, JB3 and JR10 drives, and substitutes for the said drives. HLDS identifies the substitutes as JBC1B, JB3B and JR10-1.

HLDS_CIV1548063: Quanta is looking to buy models GSA-T20N (PATA) and GSA-T30N(SATA). HLDS indicates that they are at EOL. However, GSA-T50N (SATA) is supplied as substitution to GSA-T30N and GSA-T40L(PATA) is a substitute for GSA-T20N(PATA). Quanta agrees to order 60 units of GSA-T50N (SATA).

SOA_DOJ_1_1282387: an unsigned Product Purchase Agreement between HP and Lite-On. In this document, substitutability is discussed in sections 5.5 and 11.4. In section 5.5, if HP is being offered ODDs which have superior technical specifications or capabilities, "HP may provide specifics so that Supplier may revise specifications for Product or otherwise offer such substitute goods to HP hereunder." Section 11.4 states that HP has a right to substitute products that are more efficient or less expensive. "11.4 Substitute Products. If Supplier develops any products that are more efficient or less expensive than the comparable Product available under this Agreement, HP will have the right to substitute such products, if compatible with any current version of HP Products, at such pricing as the parties may mutually agree."

ODDCIV-003647950: PLDS Sales Review Action Tracker spreadsheet with an entry listed for week 633 under Dell account indicating that PLDS could replace Slim DVD-RW with Slim Combo/DVD-ROM after being awarded Slim DVD-RW.

³⁰ European Commission, Case No COMP/M.4502 -LITE-ON / PBDS, *supra* note **Error! Bookmark not defined.** at 3 ("With respect to the type of PC in which ODDs are built-in, a distinction can be made between

application for another, however, because of the relatively short cycle time in production (a month or less).³¹ The short cycle time means that production mix can be quickly altered to meet changing demands.

47. There is also substitutability in demand among drives by size. Thus, while a notebook computer model or desktop computer may utilize a particular size of optical drive once its design is complete, there is substitutability among different sizes and form factors for these drive-using products on the demand side. A customer may be willing to accept a thicker laptop, for example, if the price of the required ODD leads to a computer price that is substantially lower than a thinner but much more expensive model. Indeed, we actually see examples of this in the marketplace.³²

48. The result was substantial substitutability across ODD drive models and producers as these drives were being designed into customer products.³³ Customers encouraged substitution across models and producers in structuring their procurements. As noted above, ODD drive producers often offered several different models in responding to the same RFQ.³⁴

desktop PCs housing half-height ODDs and laptops/notebooks which use slim ODDs. However, slim ODDs can also be found in desktop PCs.”).

³¹ *Id.* at 8 (“Customers for PC ODDs largely confirmed the parties’ view that regular switching of supplier is a typical feature of this kind of industry, in particular due to short order cycles which can sometimes even be less than one month. Easy switching is facilitated by a number of factors. Firstly, supply contracts are of a short duration, non-exclusive and they typically contain provisions to allow termination at short notice. Secondly, the overall technical specifications for PC ODDs are well-known by all suppliers. They also have to meet the specific designs of each PC OEM manufacturer and have to undergo a qualification process. Once done, the lead time to adapt the manufacturing process of the customer is short when switching to another qualified supplier.”).

Supplemental Objections and Narrative Responses of Quanta Storage Inc. and Quanta Storage America, Inc. to Plaintiffs’ Joint Notice of 30(b)(6) Deposition at 14 (“Because Quanta generally produces only in response to orders, Quanta’s historical and current practice is to keep minimal inventory at its facilities and to maintain approximately 10 days of inventory at hubs designated by its customers. Products were and are typically shipped within approximately 1 month of the date of production.”).

Objections and Responses to Plaintiffs’ Amended Joint Notice of Deposition of the Sony Defendant Family Pursuant to Federal Rule of Civil Procedure 30(b)(6) at 18 (“Production levels for ODDs were generally set depending on the orders received from local sales companies, such as SOA. Roughly once every one to two weeks, salespeople or the local sales companies would, based on feedback from customers, send requests for production. Those requests would then be communicated to the relevant factory, which on occasion might provide some feedback in response to the request, for example if the factory were not able to provide the desired quantity. To facilitate this process, Sony EMCS Malaysia generally met bi-weekly with the Sony/Optiarc ODD business to discuss production.”).

³² For example, Intel’s light and thin Ultrabook reference notebook designs have sold many fewer units than originally hoped for, in part because few consumers were willing to pay a hefty price premium over a thicker but considerably cheaper unit. See <http://money.cnn.com/2012/10/01/technology/ultrabook-sales-forecast/index.html> , http://news.cnet.com/8301-10805_3-57523672-75/remember-ultrabooks-yeah-no-one-else-does-either/.

³³ See, e.g., **HEDUS00150877 – 882**: letter to Hitachi accepting on-hand models that do not meet requested specifications.

³⁴ **ODDCIV-001022320**: While Dell will take the initial position that the spec must remain as is, they will also be open to modifications if they can provide savings. Philips can easily convert DVD ROMs to CD ROMs. According to Philips, Dell’s plan is to have a drive capable for DVD ROM support but able to be “downgraded” to CD ROM when necessary, via FW, to save on royalties associated with DVD ROM. Dell wants to buy DVD ROM at a cost that is “at parity with CD-ROM” and it “may accept a \$1-2 delta but no more.” Dell prefers 16X but indicates that 12X speed may be fine if Philips is able to offer a better price.

49. Customers for ODDs could and did easily switch between suppliers. “[R]egular switching of suppliers is a typical feature of this kind of industry, in particular due to short order cycles which can sometimes even be less than one month. Easy switching is facilitated by a number of factors. Firstly, supply contracts are of a short duration, non-exclusive, and typically contain provisions to allow termination at short notice. Secondly, the overall technical specifications for PC ODDs are well known by all suppliers. They also have to meet the specific designs of each PC OEM manufacturer and have to undergo a qualification process. Once done, the lead time to adapt the manufacturing process of the customer is short when switching to another qualified supplier.”³⁵

50. Defendants Philips, BenQ, and Lite-On were also explicit in their presentations to the European Commission on the existence of demand-side substitutability: “The parties also provided examples for a degree of demand-side substitutability regarding the choice between PC ODD types which can be found both in PCs and in products supplied to the aftermarket. The parties argue along similar lines with respect to the degree of demand-side substitutability when considering the different ODD families. On this basis, the parties consider the relevant product market likely to be the overall market for PC ODDs, which could possibly be subdivided by half-height PC ODDs and slim PC ODDs.”³⁶

3. Vertical Product Differentiation

51. The technical specifications, form factors, and interfaces of optical disk drives are industry standards—some of these fixed by standard setting organizations, others by industry consensus. Even speeds for drives have been incorporated into the standard technical specifications as they have improved over time.

52. The principal dimensions of product differentiation in ODDs are speed (either for reading data off of a disc or burning data to it) and form factor/size. These are industry standards. When new form factors have been introduced (e.g., various thicknesses for slim format drives), they have been quickly copied and established as new industry standards.

53. There have been periodic attempts to introduce new proprietary features into the marketplace in order to differentiate drives (e.g., the ability of a drive to burn labels on the tops of more expensive and more capable recordable discs—“Lightscribe” or “Labelflash”), but there is no evidence that these have had a significant impact on competition in the ODD industry. Furthermore, these features are available for license to all producers and therefore offer no significant competitive advantage.³⁷ Furthermore, as already remarked, the manufacture of brand name drives is often farmed out to contractors, either entirely or in part, so there are no great differences across brands in drive quality related to manufacturing source. By nature and by design—tracing back to the patent pools and common technology base shared by all remaining

³⁵ European Commission, Case No COMP/M.4502 -LITE-ON / PBDS, *supra* note **Error! Bookmark not defined.** at 8.

³⁶ *Id.* at 3-4.

³⁷ A list of vendors of Lightscribe-enabled ODD recorders is available at <http://www.lightscribe.com/products/index.aspx?id=89#eicddvdw>. A list of vendors of Labelflash-enabled drives is available at <http://labelflash.jp/product/index.html>.

ODD producers³⁸—ODDs are simply a highly standardized commodity product, whose designers survive for the most part on the royalties from the embodied technology, rather than the value added in the manufacturing or design process.

54. After conducting a market investigation of the PBDS and Lite-On merger of 2007, based on discussions with both competitors and customers of defendants Philips, BenQ, and Lite-On, analysts at the European Commission arrived at a similar conclusion:

[T]he market for PC ODDs is to a large degree commoditised due to technical standards known by all suppliers. Nevertheless, the Commission examined the possibility as to whether the parties would be each others' closest competitors in the overall market for PC ODDs or in any of the potential sub-segments. In nearly all tenders, in which the parties participated, at least three (but more often four to five) competitors submitted their bids. The analysis revealed [...]. Due to the multi-source policy of the customers, the supply volumes were often split amongst two or even more successful suppliers for the same tender.³⁹

55. Even if one were to grant more importance to the minor dimensions of product differentiation observed in ODD drives, the economic industrial organization literature teaches that in any event, the homogeneity or heterogeneity of products has an ambiguous effect on the facilitation of collusion by those producers.⁴⁰ Because it would not impede punishment of a cartel defector, the way in which product differentiation is expressed in this industry neither hinders collusion nor prevents a cartel from having a common impact.

56. As previously remarked, the most important dimension of product differentiation in ODDs of a given size/form factor is drive speed (reading and writing). The hierarchical nature of this product characteristic—that is, more always being better—would facilitate collusion. Since the “better” drive product could always be substituted for the lower-quality drive product with no detrimental effect on demand for the end use application making use of these drives, raising the price of the lowest-quality product would most likely cause at least some consumers of the lower-end drives to shift to a higher-quality drive, which would now be cheaper relative to the price of the lower-quality drive whose price was being fixed, and possibly to other sizes of

³⁸ The standard licensing agreements for the ODD patent pools require grantbacks – that rights to essential technologies developed by licensees must be granted back to the pool. “Both DVD pools require licensees to grant back to the licensors, as well as to the other pool licensees, licenses on any essential DVD patents that they may own or control during the term of the license, on reasonable and nondiscriminatory terms.” U.S. Department of Justice and Federal Trade Commission, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition*, chapter 3, at 70 (2007).

³⁹ European Commission, Case No COMP/M.4502 -LITE-ON / PBDS, *supra* note **Error! Bookmark not defined.** at 8.

⁴⁰ Motta explains this well: “Suppose that products are differentiated. In this case, it is harder to punish a deviant firm, since even a considerable reduction in prices by rivals would leave the deviant firm with positive demand. This effect tends to discourage collusion, as only the fear of punishment makes firms refrain from deviating. However, for precisely the same reasons, under differentiated products a deviation is also less profitable: a deviant firm cannot expect to gain very large market shares from rivals unless it makes a very considerable cut in price, an effect that tends to facilitate collusion.” Motta, *supra* note **Error! Bookmark not defined.** at 146.

drive. All else equal, this would lead to increased demand for the higher-speed drives and, therefore, an increase in price. Thus, an initial and successful price increase in the lower-quality drive of a given size would quickly lead to price increases in higher-quality drives of the same size as well as increased prices for other-sized drives that could be substituted in the same application. Thus, base model price increases can serve as the means to propagate increased prices to other models.

57. Indeed, there are numerous documents demonstrating that the defendants thought of pricing of higher-quality products in terms of “add-ons” to pricing of lower-quality products within a size/form factor.⁴¹

58. Further, emails show that both ODD drive customers and the producers of these drives negotiated sales prices for these products based on a perceived “market price” for an ODD product defined by a form factor/speed combination.⁴² This pricing practice in the ODD industry

⁴¹ **ODDCIV-000039138:** Fannie Lee of PLDS advises colleague, JC Lim, that they are quoting Dell for their 12.7 mm drives and that pricing has been approved by their superior Charlie Tseng. Lim has advised Fannie Lee that PLDS’ cost adder pricing is “based on obtaining other suppliers pricing.” Lim has attached a table, which lists the cost of other suppliers’ prices for their cost adders, including: TSST, and HLDS. The table is blank for NEC and Pioneer, implying he is attempting or has attempted to obtain their pricing for their cost adder but has failed to obtain this information.

ODDCIV-000045773: J.C. Lim performs an analysis on cost adders. The attachment is a chart which lists a draft of Lim trying to gather what other suppliers are charging for cost adders with a final row “Best price from other suppliers.”

ODDCIV-000048887: J.C. Lim sends Fannie Lee (copying others) an email telling her that he has reorganized the pricing information [for Dell 12.7 DVD-RW]. Attached is a detailed spreadsheet with all competitors’ information, including a quarterly history of the cost adder pricing information titled “Analysis.”

ODDCIV-000076086: J.C. Lim sends an email to Fannie Lee (copying others) regarding the Slim DVD-RW IN to occur the next day. Attached is a detailed spreadsheet containing competitors pricing (including cost adders) and competitors’ intentions at the auction.

ODDCIV-0003410787: Frederick Wong of PLDS sends an email to colleagues Jerry Hsieh, Fannie Lee, and JC Lim regarding the Dell Slim IN. He has gathered information on competitors, including cost adder pricing, informing them in the cover email that TSST says that their cost adder is \$1.50 for both Lanai and Spears, but he does not believe this information. The attachment contains cost adder information on PLDS, TSST, HLDS and Sony Optiarc.

ODDCIV-003418195: Frederick Wong of PLDS circulates information he gathered from competitors concerning the upcoming PATA Slim DVD-RW auction. He attaches a detailed spreadsheet which contains cost adder pricing. The spreadsheet may be for planning or strategy purposes, as it already has rankings listed.

ODDCIV-003188153: HP conducts an auction solely on cost adders. After the auction Freddie Hsieh of PLDS asks a colleague to contact Satoshi Kitamura of Sony/Lite-On for the respective rankings.

⁴² *See HLDS_CIV0021794*, an internal HLDS discussion of HP prices from 10/18/2005. Andrew Chiu of HP objected to the prices provided by HP on the basis of a lower market price. Daniel Hur writes, “So, first of all Andrew asked GPS Taiwan to check the price and he discussed the price of HP and market with ODM buyer/PM, met in China business trip. In addition, some suppliers provided the market price information and offered to Andrew the competitive price to get DVDRW business, Andrew got some extra information. “ According to Andrew, the DVD-RW price is \$60 or high \$50 in October, but HLDS is charging HP \$63. For this reason, Andrew requests that HLDS give a \$60 price instead.

HLDS_CIV0021794, where PLDS employees are discussing a plan to sell BD drives to HP. Jerry Hsieh brings up the market price of BDRO, writing, “We need to collect some market information (for example Optiarc’s BD ROM) as reference. You might want to contact JC for some information exchange. We are wondering whether Optiarc approach cPC on their BD ROM drives? I believe Q4 market price still above \$100. If we can provide some information, we might convince YP to take our BDROM drive around \$99 in Q1.”

would tend to reinforce the relationship of the prices of the various types of ODD drives to base model prices.

59. Finally, the empirical evidence I have reviewed suggests that there are minimal sales of true “custom” products to only a single customer. Drives are rarely designed and sold to a single customer. For example, the sales data provided by PLDS show that less than 10 percent of its revenues came from models that were sold to a single customer.⁴³

4. Price Increases in One Marketing Channel Would Diffuse to Other Types of Customers

60. Generally, in electronic component markets, products are sold through multiple distribution channels. Large OEMs buy their components at contract prices that are negotiated in advance of delivery. Authorized distributors buy directly from producers, then sell to smaller OEMs while offering manufacture warranties and support. So-called independent “grey market” distributors and brokers buy excess or surplus inventories from OEMs of all sizes, as well as from component manufacturers, then resell to other customers not requiring manufacturer support. Prices in all these channels are linked: a price increase (or decrease) in one channel will diffuse to other channels.

61. Further, even within a single distribution channel, buyers typically mitigate supply risk by distributing purchases across a portfolio of multiple vendors. This is evident in the details of the procurements described in documents.⁴⁴

ODDCIV-000299381: In this email dated 11/26/2007, PLDS has met with Jabil, not an OEM, but an electronic contract manufacturer. PLDS will sell the needed drives to Jabil via distributor Sunland (SLI). Darlo Perez, in offering pricing advice internally to Gregorio Contraras, indicates that he looks to online sites in determining prices. Publicly available online sources Perez lists are: nextag.com, pricewatch.com, overstock.com, ebay.com and justdeals.com.

⁴³ 7.18% of sales and 9.97% of units.

⁴⁴ See **PNA-CIV0000250233:** Amy Salter of Panasonic sends a Dell report in which one of the topics is Dell’s plan to add a fourth Combo supplier, either QSI or Toshiba. She writes, “The reason Dell is considering 4th source is the Combo demand is growing faster than Dell expected. They need to meet the demand and at this point, the only way they can meet demand is to add another supplier.”

SOA_DOJ_1_1267880: Dell wants to add a third company to their Slim DVD-RW suppliers to guarantee supply. Tomomi Yamada spoke to a Sales Director at NEC, who explained that Dell’s objective is “not only cancelling the most recent shortage...Dell can’t take the risk of having two companies with the same OPU vendor.” Sony and NEC want to block the addition of a third company because that would lead to price reductions.

PNA-CIV0000238703: David Martinez writes a report on the Apple SD and Combo situations. Apple is planning to add suppliers for SD. He writes, “It is no secret that Apple Ops will need to add suppliers given the challenges we faced a couple of months ago, this would potentially speed up the process along with a larger impact from a share standpoint.”

SOA_DOJ_1_1052922: JC Lim shares information that he and Steve Jaska of Sony gathered about the HH SATA CDROM for Dell. He writes, “Since there is only 2 SATA DVD suppliers(i.e Sony/Liteon & Philips), Dell is also planning to bring in 3rd supplier so that this will benefit them during the IN. Dell’s idea is that it is more easy to drive cost down when there is 3 suppliers. That explains why Dell is more likely to bring on a 3rd source due to the volumes do not really pickup until Q4.”

62. The European Commission investigation of the 2007 Philips/Lite-On ODD business merger specifically remarked on the extent that procurement of an optical drive for use in a computer by PC OEMs was spread across a portfolio of multiple vendors and supply sources:

Manufacturers of PCs, in particular OEMs such as HP, Dell, Toshiba, account for a large part of the world-wide demand for PC ODDs. Also the vendors of branded aftermarket products containing PC ODDs, such as Panasonic, Pioneer, Samsung, represent a significant part of their demand. These highly sophisticated customers apply a multi-sourcing policy, or at least a dual-source policy as regards the aftermarket vendors, thereby negotiating for any order with at least three to four potential suppliers. Since customers already fix a price point for the individual supply contract, which is typically linked with a specific PC model, prior to the negotiation potential suppliers have to compete on terms of quantity and quality but also on price.⁴⁵

63. The mechanisms of this price diffusion are both informational (buyers track prices in other channels, and use this information in negotiations)⁴⁶ and direct. Buyers who mainly buy

⁴⁵ European Commission, Case No COMP/M.4502 -LITE-ON / PBDS, Feb. 16, 2007, p. 7, available at http://ec.europa.eu/competition/mergers/cases/decisions/m4502_20070216_20310_en.pdf.

⁴⁶ See **ODDCIV-000299381**: In this email dated 11/26/2007, PLDS has met with Jabil, not an OEM, but an electronic contract manufacturer. PLDS will sell the needed drives to Jabil via distributor Sunland (SLI). Darlo Perez, in offering pricing advice internally to Gregorio Contraras, indicates that he looks to online sites in determining prices. Publicly available online sources Perez lists are: nextag.com, pricewatch.com, overstock.com, ebay.com and justdeals.com.

ODDCIV-001027892: HP has been monitoring the retail price of a drive, here on TigerDirect.com. HP learns on the website that BenQ is offering a drive for less than is being offered to HP. HP either wants the lower price, or to have Philips reign in BenQ from offering the low price to TigerDirect, which it must have, since the price offered is so low. Emmanuel Erba of HP writes to Rudy Philips of Philips, “We need either drive prices from Philips that enable to reach those street prices (i.e., a \$50 drive) and/or more control from Philips over these practices (4th time we have an escalation about this).”

SOA_DOJ_1_1360107: Steve Jaska reports on a meeting with Bill (Bill Bundlie of Dell) where a Digitimes article’s announcement of a 8x Slim DVD burner price drop affected his price request. Jaska writes, “Bill expects us to send a formal response to the note he sent to use yesterday. The other supplier said that it will take some time to prepare a response. Bill needs our help since all of the notebook marketing folks have seen this note, and they expect Bill to get this type pricing for them.” The Digitimes article “OEM prices for 8x slim DVD burners fall to US\$70-80” follows.

SOA_DOJ_1_1088399: This concerns the same Digitimes article as the above document. Russell Hudson of HP contacts Sony to ask for more information about the article. The article announces, “OEM quotations for 8x slim-type DVD burners have dropped to US\$70-80, according to OEM makers in Taiwan, as competition heats up among optical-drive makers in Taiwan, South Korea and Japan.” Sony’s Masafumi Amino replies that the article is inaccurate: “Actually, Austin people sent me the same article complaining. So, we can assure you that we are also quite surprised by this, and have never offered this type of ridiculous pricing for 2Q or 3Q.”

HLDS_CIV0015010: Jason Kim of HLDS writes about the Digitimes Slim DVD-W price report about HLDS and TSST suppliers and prices. HLDS plans to file a claim against Digitimes for the speculative article. As a result of the information in the article, Dell “has requested for an official explanation from HLDS and a commitment from HLDS that it is providing Dell with the best cost in order to resolve the suspicions of Dell’s top management.” Kim states that the article will have an impact regardless of whether it’s true, writing, “Estimated impact: No matter whether the article is true or not, as the price has already been released through the media, Dell management will view the price quote in the article as the market price and will ask to lower the target price of Slim DVD-W.”

through one channel will transfer more of their demand to other channels should sufficiently great price differentials open up; or should shortages in one channel crop up, buyers in that channel will bid away supplies from other channels. Conversely, should demand not materialize for OEMs, excess OEM holdings of inventory may be liquidated through brokers, who transfer the product into other marketing channels. If ODD producers themselves find themselves with excess inventories in the “hubs” used to service their large OEM accounts, they too will discretely liquidate those excess inventories into other channels.

64. It is not difficult to illustrate how products authorized for sale into one marketing channel can easily end up being sold through another. As a real-life example, **Figure 4** shows the online availability of ODDs, on January 22, 2017, sold by U.S. electronic component distributor Mouser (a member of the Warren Buffett Berkshire Hathaway family of companies since 2007), along with current online prices. The drives are branded products of defendants Hitachi, LG, and Lite-On. Note that Mouser targets small-volume buyers and shows its pricing online for quantities of 1, 5, and 10 units. These items are only available online, and neither these drives nor their prices are listed in Mouser’s downloadable catalog. Sales quotes on larger volumes are available by contacting Mouser.⁴⁷ Mouser does not actually have this item in stock, but it will take an order for the item at the advertised price. Other, larger U.S. distributors (e.g., Avnet) sell some of these same items, and show stock availability, but do not always quote prices online. See **Figure 5**.

Figure 4: Online Availability of Defendant ODDs at Mouser Electronics on 1/22/2017

1/22/2017 Mouser Electronics - Compare Products

Contact Mouser (USA) (800) 346-6873 | Feedback Cart | Change Location English USD

MOUSER ELECTRONICS All Part # / Keyword ☐ Stocked ☐ RoHS Compliant





Products Manufacturers Applications Services & Tools Catalog Help

[Return to Search Results](#) [Remove](#) [Add to Cart](#) [Add To Project](#)

Product Info.					
Image:					
Check All:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mouser Part #:	923-96SDVR8XSTHLB	923-96DVR24XSTLG5	923-96SDVR8XSTLTB2	923-96DVR24XSTLTB	923-96DVD18XSTLTB
Mfr.'s Part #:	96SDVR-8X-ST-HL-B	96DVR-24X-ST-LG5	96SDVR-8X-ST-LT-B2	96DVR-24X-ST-LT-B	96DVD-18X-ST-LT-B
Manufacturer:	Advantech	Advantech	Advantech	Advantech	Advantech
Description:	Other Modules HITACHI-LG SLIM 8X SATA DVD+/-RW DL BK	Other Modules LG 24X SATA DVD+/-RW DL	Other Modules LITEON SLIM 8X SATA DVD+/-RW DL BLACK	Modules Accessories LITEON 24X SATA DVD+/-RW BLACK(G)	Other Modules LITEON 18X S DVD-ROM BLACK(G)
Datasheet:	-	-	-	-	-
RoHS:	-	-	-	-	-
Specifications					
Brand:	Advantech	Advantech	Advantech	Advantech	Advantech
Standard Pack Qty:	1	1	1	1	1
Ordering Information					
Stock:	Non-Stocked	Non-Stocked	Non-Stocked	Non-Stocked	Non-Stocked
On Order:	0	0	0	0	0
Factory Lead-Time:	Request Delivery Quote	Request Delivery Quote	Request Delivery Quote	Request Delivery Quote	Request Delivery Quote
Pricing:	1: \$38.15 5: \$37.55 10: \$36.16	1: \$31.57 5: \$31.07 10: \$29.92	1: \$34.21 5: \$33.66 10: \$32.41	1: \$30.26 5: \$29.78 10: \$28.67	1: \$17.10 5: \$16.83 10: \$16.20
Buy:	Qty: <input type="text"/>	Qty: <input type="text"/>	Qty: <input type="text"/>	Qty: <input type="text"/>	Qty: <input type="text"/>

Contains Materials Designated as Confidential Pursuant to Protective Order
In Re Optical Disk Drive Antitrust Litig., Case No. 10-md-2143

Figure 5: Online Availability of Defendant ODDs at Avnet Electronics on 1/30/2017

Product	Quantity	Price	Availability	Manufacturer
 96SDVR-8X-ST-LG-B1 Advantech LG SLIM 8X SATA DVD+-RW DL BLACK(G)	+ 1 -  Min: 1 Mult: 1 Add to BOM	\$ USD 40,54054 1+ \$40.54054 10+ \$40.00 25+ \$39.47368 More	More available in: 2 weeks More Stock	Advantech
 96SDVR-8X-ST-LG-B4 Advantech LG SLIM 8X SATA DVD+-RW DL BLACK	+ 1 - Min: 1 Mult: 1 Add to BOM		More Stock	Advantech
 96SDVR-8X-ST-LT-B2 Advantech LITEON SLIM 8X SATA DVD+-RW DL BLACK	+ 1 - Min: 1 Mult: 1 Add to BOM	Requires Quote REQUEST QUOTE	Ship From MFR: 14 More available in: 14 weeks More Stock	Advantech

65. Mouser is not an authorized distributor for HLDS, LG, or Lite-On branded optical drives⁴⁸ but is an authorized distributor for Advantech, a Taiwanese Original Design Manufacturer (“ODM”) that was the largest industrial computer manufacturer in the world in 2014 (its largest shareholder was Asus).⁴⁹ As is evident in **Figure 6**, these optical disk drives all have Advantech part numbers but show the original drive manufacturer and drive specifications as part of their description. Indeed, the detailed technical data sheets for these “Advantech” parts are just the Defendants’ data sheets for these models,⁵⁰ and clicking through the links for the parts leads to a “get price” button that allows potential volume buyers to get a price quote. These parts were not currently offered for sale through Advantech’s online store to small customers. It seems clear that if Advantech, as a relatively high-volume ODM/OEM, had unwanted inventory of the standard, commodity optical drives it installs in the industrial computer systems it designs and manufactures, it could simply resell them directly, and through its distributors—like Mouser

⁴⁸ Though it is an authorized distributor of light-emitting diodes manufactured by Lite-On.

⁴⁹ Advantech 2015 Annual Report, pp. 60, 75.

⁵⁰ The original Defendant data sheets on these ODD models are provided on the Advantech web site at http://wfcache.advantech.com/www/certified-peripherals/documents/96dvd-18x-st-lt-b_datasheet.pdf ; http://wfcache.advantech.com/www/certified-peripherals/documents/96dvr-24x-st-lt-b_datasheet.pdf ; http://wfcache.advantech.com/www/certified-peripherals/documents/96sdvr-8x-st-lt-b2_datasheet.pdf ; http://wfcache.advantech.com/www/certified-peripherals/documents/96dvr-24x-st-lg5_datasheet.pdf ; http://wfcache.advantech.com/www/certified-peripherals/documents/96sdvr-8x-st-hl-b_datasheet.pdf .

and Avnet—into distributor⁵¹ and retail market channels.⁵² Indeed, it seems to be actively doing so.

Figure 6: OEM Advantech’s “Certified Peripheral” ODDs Available for Sale on 1/30/2017

1/30/2017

Advantech - industrial computer , industrial chassis, embedded computer, industrial motherboard, network security appliance, industrial automation, digital video surveillance, panel PC, industrial IO

Register

MyAdvantech

Search

Products

Solutions

Services

Partners

Support

Corporate

Contact



eStore

Certified Peripherals / Products / Comparison /

Certified Peripherals

Product Comparison

[Pri](#)

Products	Product Description	Hitachi-LG Slim 8X SATA DVD+/-RW Dual Layer Black	H&L 24X SATA DVD +/-RW Dual Layer	LiteOn Slim 8X SATA DVD+/-RW DL Black	LiteOn 24X SATA DVD+/-RW Black(G)	LiteOn 18X SATA DVD+/-RW Black(G)
Solution	Product	96SDVR-8X-ST-HL-B	96DVR-24X-ST-LG5	96SDVR-8X-ST-LT-B2	96DVR-24X-ST-LT-B	96DVD-18X-ST-LT
Partnership	Manufacturer	Hitachi-LG	H&L	LITE-ON	LITE-ON	LITE-ON
Procurement Service	Type	DVD-ROM	DVD-RW	CD-ROM	DVD-RW	DVD-ROM
CPU and Memory Finder	RoHS Status	YES	YES	YES	YES	YES
	Interface	SATA	SATA	SATA	SATA	SATA
	Speed	8X	24X	24X	24X	18X
	Color	Black	Black	Black	Black	Black
	MTBF	150,000 HOURS	100,000 HOURS	60,000 HOURS	70,000 HOURS	70,000 HOURS
	EOL	Q2 / 2017	Q2 / 2017	Q4 / 2017	Q4 / 2017	Q4 / 2017
	Replacement Model	TBD	TBA	TBA	TBA	TBA

66. Examples of these links across marketing channels are also apparent in the data produced by the defendants in this litigation. When supplies are short and prices rise, large OEMs (like HP) will buy from distributors and even brokers on occasion. If contract prices rose significantly, while distributor prices did not, OEMs would transfer relatively more of their demand to the distributor channel, pushing up prices in that channel. Examples of OEMs buying from both authorized distributors and brokers, as well as directly from the defendants, can be found in defendant data.⁵³ Similarly, examples where an OEM is the “bill to” customer of record,

⁵¹ Since the defendants’ drives are being resold as Advantech parts, Advantech would be responsible for any warranty issues, through its authorized distributors Mouser and Avnet. If the defendant drives were acquired directly and sold by an independent (grey market) distributor instead, there would generally be no manufacturer warranty.

⁵² If Advantech negotiated a particularly attractive procurement price from an ODD producer, and was permitted to resell drives it purchased (or could do so surreptitiously with no fear of detection by the ODD maker), it could also make additional arbitrage profits in times of robust ODD demand by procuring extra drives from the ODD producer, then turning around and reselling drives it had purchased to other OEMs, and resellers, at a slightly higher price, through its authorized distributors, like Mouser, and through independent distributors and brokers.

⁵³ For HLDS, for example, in LGEUS00000022^Confidential-Restricted^LGE brand ODD sales data_2003-2009_(LGEUS).xlsx where BILL_TO_NM=“D & H DISTRIBUTING CO 51355” and SHIP_TO_NM=“BYTESPEED LLC.” In LGEUS00000022^Confidential-Restricted^LGE brand ODD sales data_2003-2009_(LGEUS).xlsx where BILL_TO_NM=“INGRAM MICRO” and SHIP_TO_NM=“HEWLETT PACKARD CO.”

but has chosen to “ship to” a distributor or broker for apparent resale can also be found in the transactional data.⁵⁴

67. The existence of the stable, long term equilibrium relationship between prices in different distribution channels described here is also supported by a statistical analysis of the transactional data, described below.

68. Therefore, a price-fixed increase in the price for a given form factor and speed of an ODD would have induced a wave of price increases for faster drives and substitute drives of different types and form factors. This is supported by the statistical analysis I describe below. I have concluded that the relatively limited, highly-structured variations in products sold in this industry would not have hindered the fundamental economic forces of supply and demand-side substitution from transmitting the effects of price-fixing across products, marketing channels, and customers, nor prevented such price-fixing from having an impact on indirect purchasers of all ODD products.

C. ODD Drive Pricing Practices

69. Formal or informal “most favored customer” (MFC), “meet competition,” or “price protected” sales terms can also favor effective cartel performance. Such terms assist in the maintenance of a collusion by 1) increasing the speed with which conspirators learn about competitors that are deviating from agreed prices (customers report them in order to get the price matched) and 2) increasing the potential cost of a deviation from agreed prices (a lower price offered to one customer requires the firm to offer that lower price to all its MFC customers).⁵⁵

70. Though ODD supply contracts do not always contain such clauses in writing, some customers received such guarantees formally or informally.⁵⁶ Price protection was also sought and granted.⁵⁷

For PLDS, for example, in LO_PLDS Sales (1).txt where bill_to=“BT-INGRAM MICRO” and ship_to=“Rain” [no Bates for file was part of Z000004].

⁵⁴ For PLDS, for example, in LO_PLDS Sales (1).txt where bill_to=“AcerUSA-BT” and ship_to=“TECH DATA.” In LO_PLDS Sales (1).txt where bill_to=“AcerUSA-BT” and ship_to=“D & H NJ.”

⁵⁵ Luís M. B. Cabral, *Introduction to Industrial Organization* 140-142 (Cambridge: The MIT Press 2000); and Motta, *supra* note **Error! Bookmark not defined.** at 156-158, discuss these issues.

⁵⁶ Examples of formal MFN clauses include:

HLDS_CIV2408193, a contract between HLDS and Apple - 4.3. Most Favored Customer clause.

HLDS_CIV2408348: Product Purchase Agreement, p. 11, “5.3 Best Pricing. At any time during the Term, unless otherwise agreed, if Supplier sells or offers to sell Product with comparable volume under like payment terms at lower pricing or upon more favorable terms and conditions than in effect hereunder to another customer, Supplier will promptly notify HP and, unless prohibited by Applicable Law, offer such lower pricing or more favorable terms and conditions to HP during the period in which such lower pricing or more favorable terms and conditions are offered or in effect.”

71. MFC and meet-competition terms in contracts typically gave the purchaser the right to shift purchases to alternate suppliers if commitments to best available pricing were not honored by an ODD producer.⁵⁸ Hence, the existence of MFC and meet-competition pricing is also evidence that there was substantial substitutability among drives that were produced by different ODD producers.

III. PRICING RELATIONSHIPS IN THE ODD INDUSTRY

72. In a previous section of this report, I sketched out a series of economic reasons (fundamentally, substitution in both supply and demand) why we might expect a series of cartel-engineered increases in the price of certain ODDs, to certain customers, to have a wider impact on the prices faced by other purchasers, and for other ODD products. For a commodity electronic component, like ODDs, produced by multiple producers and sold to multiple customers, the economics of marketplace competition transmits changes in price for one producer's products to other producers' products, and across customers. These competitive market forces linking prices together include substitution in both supply and demand, across both producers and customers. Computer maker customers search across producers and drive types for the most cost-effective ODD solutions for the computers they build. ODD producers try to balance their production across drive types and win market share and customers away from their competitors, in their quest to maximize the profitability of their businesses.⁵⁹ Economic equilibrium relationships are

Examples of informal assurances include: **PNA-CIV0000221538**: email thread where Apple wants "Best of Breed" pricing from Panasonic for SD [super drive]; **PNA-CIV0000200239** - email thread where Panasonic is faced with a Dell demand for a most favored pricing guarantee as they prepare to respond to a Dell RFQ, and suspects that Apple and Dell will likely compare pricing. Presumably Julie Reeds, Director of Procurement for Dell has previously spoken to Steve Hamlin of Panasonic about this most favored pricing guarantee. Steve Hamlin of Panasonic writes: "1) First, we need to get the executive commitment (Julie's request) for pricing x% below lowest other price provided to market (fruit co included). 2) Then, we need to be careful what price we submit on RFQ since it is likely that Apple and Dell will talk, and A will get upset if we do provide D with better pricing....".

⁵⁷ See, e.g., **PNA-CIV0000193744**: "To ensure that HP receives the benefits of lower pricing, Supplier will automatically update HP prices whenever Most Favored Customer Pricing levels drops."

⁵⁸ **PNA-CIV0000193744**: [part of HP RFQ response of Panasonic, p. 6] "Product Pricing • HP is looking for the best proposal for 12.7mm slim slot drive. As such, technology and price competitiveness will be early selection criterion. Supplier shall extend the Most Favored Customer Pricing to HP. HP will receive the most competitive worldwide pricing compared to Supplier's other customers. To ensure that HP receives the benefits of lower pricing, Supplier will automatically update HP prices whenever Most Favored Customer Pricing levels drops. If HP becomes aware that a like Product is offered by an alternative Supplier at a lower price, both companies will work together to achieve a similar level of competitiveness. HP is more than willing to work with our Suppliers to source components via existing HP components contacts."

HLDS_CIV0154137: draft HP Product Purchase Agreement PPA, in this case with HLDS, covering "All HLDS Optical disk drive models qualified for use by HP..." (Exhibit A to the PPA, p. 29), gives HP the right in Clause 5.2, "Competitive Offerings", that if HP has received a lower offer, "HP may notify Supplier that HP has received a bona fide offer to deliver Product, or a substantial equivalent, under written contract in approximately comparable volume, mix, service level and duration of committed sale as the undelivered or unperformed portion of any committed volume under this Agreement at pricing lower than pricing in effect under this Agreement or at lower total cost to HP. If within fifteen (15) days of the date of such notice Supplier does not reduce its pricing sufficiently to meet the terms of such offer and advise HP of such reduction, HP may purchase from such offer or any or all of the undelivered or unperformed portion of any committed volume under this Agreement. The quantity so purchased will be deleted from any HP purchase requirements. Anything in the foregoing to the contrary notwithstanding, this provision will not apply to (i) any Non-cancelable Order for Product or (ii) any Accepted Order arising under Section 12.1 or otherwise entered as a lifetime buy at end of Product cycle."

⁵⁹ Purchaser and Defendant documents make the point that ODDs are close to a pure commodity, with the only distinction between the products sold to different OEMs the color and logo on the plastic front bezel attached to the

observed among ODD prices over time, as is predicted by economic theory. Both an analysis of observed empirical data and the views of market participants, as documented in communications of the defendants among themselves and with their customers, confirm that these cohesive relationships exist. This section of my report utilizes statistical analyses in order to determine whether transactional data on ODD product prices produced by the defendants behave in a manner consistent with economic theory.

73. I have used a number of statistical techniques to examine whether prices in the ODD industry tend to move together. In the following subsections, I summarize the methods and procedures used to measure the relationship between prices in different segments of the ODD industry.

A. Matched Model Price Indexes and Hedonic Price Regressions

74. The extent of the relationship between the product prices (i.e., the extent to which prices of different products move together over time) is related to the feasibility of using a common methodology to demonstrate common impact. The issue is what the empirically observable structures in prices over the collusive period tell us about how effective collusion was in affecting a broad set of ODD prices, and whether that is consistent with the application of a common methodology. If product prices for different types of drive units and sets of customers in the industry are observed to be unrelated, then the alleged cartel's activities in setting prices collusively would not have affected prices for other products and customers.

75. The methods used by economists to characterize changes in price for groups of related products come from an area of economics known as the theory of price indexes. A *price index* is a measure of price change in a group of products that is constructed in order to accurately reflect the overall price trend for that category of products as a whole.⁶⁰

76. Where model-specific price information is available, as in the transaction data produced by defendants, price changes for individual models can be calculated and weighted appropriately to determine a price index for a class of products. Such indexes are called "matched model" price indexes. When model-specific transaction data are not available, average unit prices for narrowly defined categories of products are sometimes used instead. "Matched model" price indexes accurately portray trends in prices for established products and may be used to analyze the relationships between prices in different segments of the ODD industry.

ODD. See DELL-ODD00199853 at 5. Indeed, in this document, a team at Dell recommends having the bezel attached by their computer assembler/contractor rather than paying one of the Defendant ODD makers to ship the drive with the Dell bezel pre-attached, as a potential source of cost savings for Dell.

In this respect, ODDs are also different from the GPUs described in *In re Graphics Processing Units Antitrust Litigation*, 253 F.R.D. 478 (N.D. Cal. 2008), cited by the Court. This same Dell document notes that graphics cards are not really pure commodities in the same way as ODDs (because of distinctions based on brand and technical features) and therefore unlike ODDs. See DELL-ODD00199853 at 9.

⁶⁰ A practical example of why a price index for ODDs might be calculated would be to understand the impact of an increase in the price of optical pickup units (OPUs) on the price of ODDs that are manufactured using those OPUs. The price index methodologies described here would allow us to measure how the OPU price increase would affect the overall level of ODD prices, controlling for differences in the individual drive types making use of the OPUs and the relative sales of different types of ODDs in the marketplace.

77. This picture of price movements and relationships will be less accurate when new models with new characteristics are being introduced into the marketplace. In the period of introduction, there is no corresponding “matched model” to compare it to in the previous period and thus no way to calculate a rate of price change for the newly introduced model. Typically, however, this effect is very small, since newly introduced products start with relatively small sales and market shares. So, this limitation does not preclude this being a viable method to analyze prices in the ODD industry.

78. This problem, which is particularly important in high technology industries with frequent model changes driven by technological progress, can be addressed directly when there is sufficient information about product characteristics. A technique called hedonic price regression analysis uses information about the characteristics of the products being sold at each point in time, and their sales prices, to estimate the implied price change from the prior period for a just-introduced new model product. The hedonic price methodology is a generally accepted economic methodology used to calculate price indexes and price trends for high tech products with frequent model introductions. It is used by U.S. government statistical agencies in calculating price indexes for high tech U.S. industries and products, in calculating price indexes for the gross domestic product in the U.S. national income accounts, and in estimating price changes for high tech products in the consumer price index.⁶¹

79. I next turn to an analysis of the pricing of ODDs making use of the hedonic price regression methods. The first question is, how much of the variation in price within broad classes of ODDs in any time period can be accounted for by the quality characteristics information provided by defendants for these ODDs and the entities that purchase the drives.⁶² If I conclude that the majority of the variation in price for that product is explained by easily measured characteristics of the product and its buyers, then I will have little difficulty in measuring a “quality-adjusted” price for that product (i.e., a measure of change in price that takes into account changes in quality characteristics for ODDs over time).

80. For the defendants that produced sufficient product characteristic information, I perform a hedonic regression analysis of prices for those firms’ transactions within different drive type categories.⁶³

⁶¹ A well-regarded econometrics textbook describes hedonic price methods in the following terms: “After years of encouragement from a number of distinguished economists, in 1986 the U.S. Bureau of Economic Analysis published and incorporated into its official statistics the results of a study on computer prices in which the matched model method was augmented by a particular type of regression analysis known as hedonic price analysis. In one type of hedonic price analysis the matched model method is employed whenever the appropriate data are available, and then hedonic regression methods are used to impute missing prices for newly introduced or just discontinued models, thereby accounting more fully for the price changes associated with turnover of models available in the market. In another type of hedonic price analysis, the price index is estimated directly from a regression equation. In either case, hedonic price analysis forms the basis of the measurement of quality change.” E.R. Berndt, *The Practice of Econometrics* 105 (1996).

⁶² I include buyer characteristics since I would expect larger volume purchasers to receive preferential pricing.

⁶³ The data used in this hedonic regression model are individual sales transactions for HLDS, PLDS, and TSST. The hedonic model includes quantity, defendant making the sale, ODD size, speed, internal/external type, and customer type. .

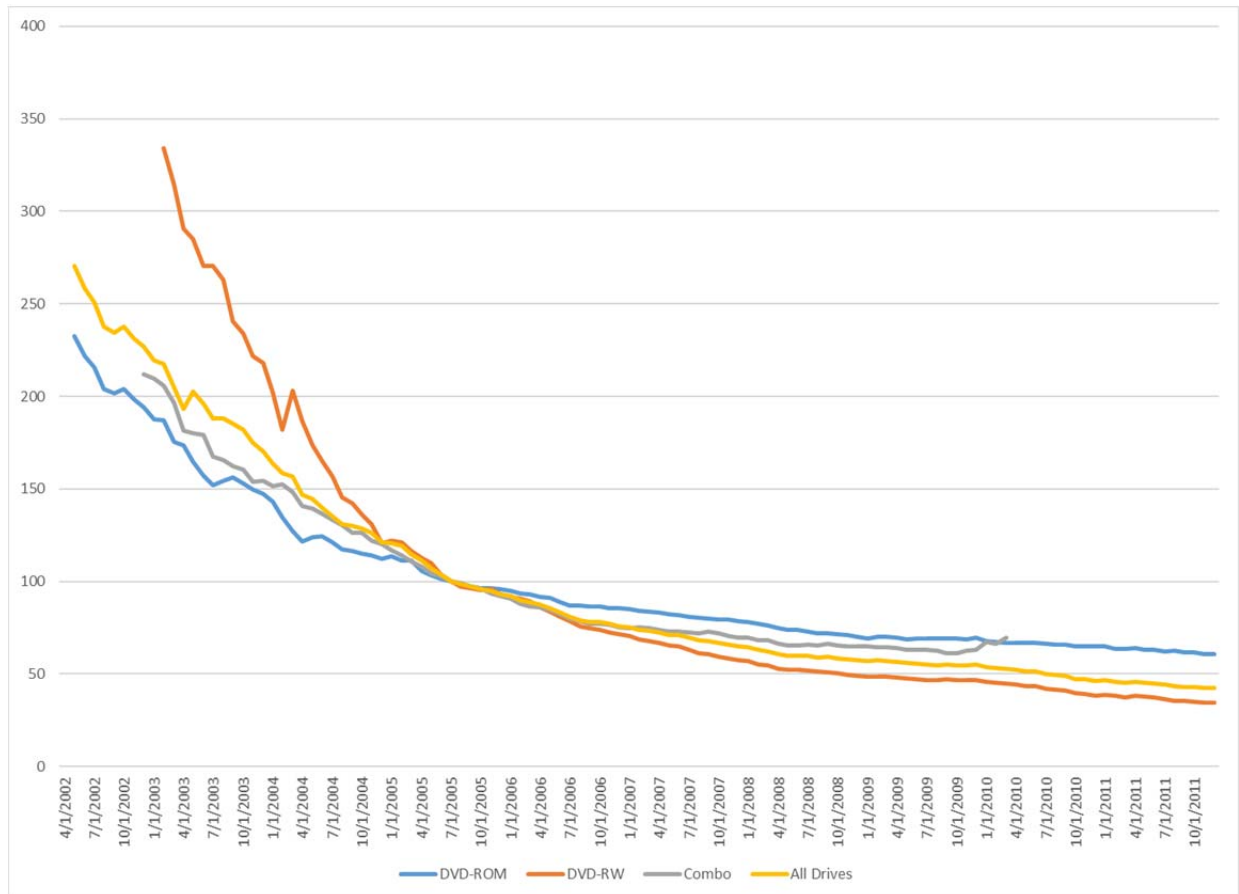
81. I estimate hedonic price equations for ODDs by regressing transaction price against a set of major product characteristics provided by these defendants. My analysis of defendants' transaction data shows that product and transaction (e.g., type of customer, purchasing volume) characteristics typically explains more than 89 percent of variation in price around a baseline price for any particular drive type at any point in time.⁶⁴ This evidence is provided by a statistic called R-squared derived from the hedonic regressions. See **Exhibit 4**. The R-squared statistic measures the share of explained variation in price around a common mean due to these explanatory characteristics. Thus, virtually all differences in prices for ODD products within these drive type categories can be explained in terms of a single common baseline price across manufacturers and customers, plus additional "add-ons" to the common baseline price attributable to specific characteristics of a given model that are different from the baseline (e.g., superior speed, different form factor, etc.).

82. This analysis shows that, within each application category, prices are well-explained as a single common price level, plus the effects of drive and transaction characteristics in increasing or decreasing the transaction price above or below the common mean.

83. These hedonic price regressions may then be combined to produce a hedonic price index, showing movements in a common baseline price for that product category over time.⁶⁵ **Figure 7** shows movements in these hedonic price indexes over time:

⁶⁴ In fact, the median R-squared was 89 percent.

⁶⁵ In technical jargon, the price index displayed in these exhibits is called a "full imputation hedonic index," and is described in J. De Haan, *Hedonic Price Indexes: A Comparison of Imputation, Time Dummy and Other Approaches* at 6-9, Working Paper 2008-01, Center for Applied Economic Research, University of New South Wales (January 2008).

Figure 7: Full Imputation Hedonic Price Indexes by Drive Type

Source: Defendant data. See backup.

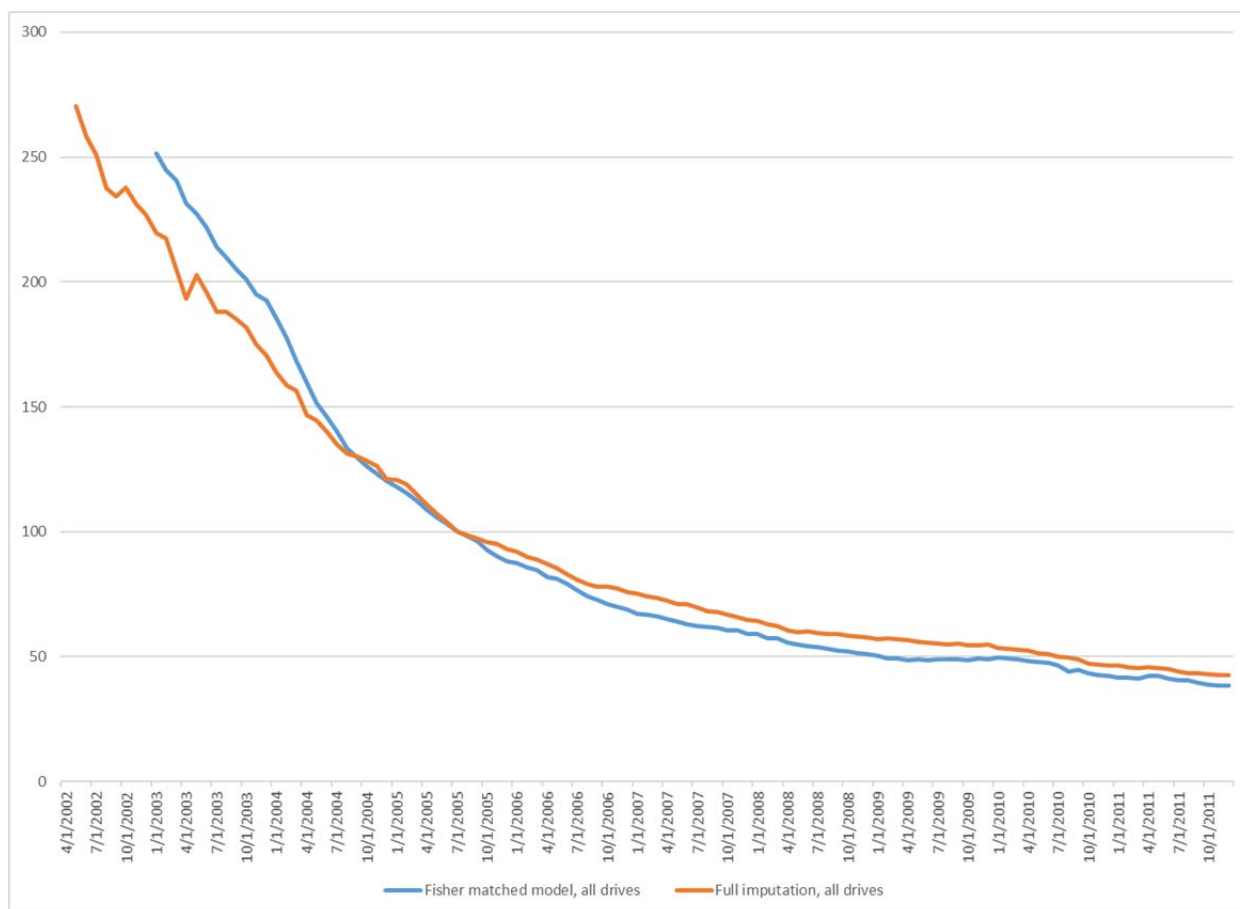
84. The ability to conduct a hedonic price analysis is limited to defendants that provided sufficiently detailed product characteristic information in their transactional data (i.e., HLDS, PLDS, and TSST). My hedonic price analysis of these defendants leads me to believe that the results would extend across the other defendants as well. Nonetheless, I also perform a matched model price index analysis in pursuing my goal of examining prices for all defendants. The matched model price analysis does not require the same level of product detail as hedonic price analysis. As such, this analysis uses transactional data for all defendants.

85. The behavior of prices in the ODD industry as measured by so-called “Fisher Ideal” matched model price indexes⁶⁶ for ODDs shows a consistent pattern similar to that of the hedonic price indexes. See **Figure 8**. Since 2003, the price has generally fallen. Differences in

⁶⁶ The Fisher Ideal matched model index is a so-called “superlative” price index, which means that it provides a flexible second-order approximation to arbitrary underlying production technology or consumer preferences for these products.

the indexes would be expected over time periods in which manufacturers introduced significant numbers of new products or discontinued older products. This occasional weakness of matched model price indexes, as discussed earlier, supports my examination of hedonic price index methods. Except for the earliest time interval when a large number of firms first entered the industry (with many new models being introduced in volume over a short period of time), hedonic price indexes and matched model price indexes tell the same story over the collusive period. As one would expect, differences between the two types of indexes arise primarily when there are many new models being introduced in significant volumes, or many old models being discontinued, from one time period to the next.

Figure 8: The Hedonic Price Index and Fisher Ideal Index Tell the Same Story



Source: Defendant data. See backup.

86. Thus, both the matched model and the hedonic regression price analyses show common price effects across product categories and manufacturers. These price indexes can be used to test the predictions of economic theory that substitution in both production and consumption of ODDs will propagate the impact of successful collusive price-setting in one set of products and customers, to prices paid by other customers, and for other products.

B. Cointegration Analysis

87. To determine if there is evidence of long-run equilibrium relationships between prices for different types of ODDs, sold to different sets of customers, that would reflect common impacts of collusive activity, we use a statistical technique known as cointegration analysis. Our reasons for using this technique is that time series variables that drift randomly over time can sometimes demonstrate what is called “spurious correlation.” In common parlance, the term spurious may suggest “false” or “illusory,” but in statistics and econometrics the term has a very specific meaning that relates to issues of causality. To say that a correlation between two variables is spurious is not to say that the two variables do not track together closely, but rather that neither variable directly causes the other.

88. The standard method of measuring how closely two variables “track together” is the calculation of a sample correlation. Correlations are widely accepted in the economics literature as a measure of co-movement among prices over time—whether or not those price movements have a trend.⁶⁷ While correlation does not prove causality, causal relationships will frequently imply that certain correlations should be observed.

89. To understand the causal determinants of ODD prices requires a detailed economic analysis of what variables were responsible for shifting drive prices over time. An observed correlation among drive prices would be causal (and therefore not “spurious”) when a movement in one drive price had a direct impact on the price of another drive or drive type, through substitution on either the demand or the supply sides of the market. For example, if the price of one type of drive went up, then other producers might shift relatively more of their production into that type of drive, resulting in price increases for other types of drives.

90. The standard techniques for determining whether statistical relationships estimated using time series data on price levels are likely to be “spurious” have been developed over the past three decades. They won Granger and Engle the 2003 Nobel Prize in Economics.⁶⁸ These techniques are well-accepted, widely-used, and easily performed.

91. Put succinctly, regression analysis based on time series data (and correlation analysis can be viewed as resulting from a particularly simple form of regression analysis) will not face the potential problem of possibly spurious results when the time series being analyzed are *stationary* or *trend stationary*, that is, have probability distributions that are stable over time.⁶⁹ Even if economic data is *nonstationary*, however, it is still possible that correlations

⁶⁷ For example, in the economic literature on price movements in financial markets, both correlations among prices and cointegration analysis (the appropriate form of analysis when prices have long run time trends, discussed in detail below) of prices are considered complementary modes of analysis.

“Thus, cointegration technique complements correlation analysis.” Kasibhatla, K.M., Stewart, D., Sen, S., & J. Malindretos, *Are Daily Stock Price Indices in the Major European Equity Markets Cointegrated? Tests and Evidence*, 50 *The American Economist* 2, 48 (Fall 2006). This article contains a useful overview and summary of the literature.

⁶⁸ See *The Prize in Economics 2003-Information for the Public*, Nobelprize.org, http://nobelprize.org/nobel_prizes/economics/laureates/2003/public.html.

⁶⁹ *Nonstationary* data do not tend to return to some mean in the long-run, but instead drift randomly. Economic data with a non-random, deterministic time-trends can be *trend stationary*. That is, by simply adding a non-random

produced by a statistical analysis of price levels will nonetheless be informative and non-spurious.

92. Valid statistical estimates of economic relationships will still be obtained when economic variables are *cointegrated*,⁷⁰ even if they are nonstationary. Gujarati attempts to translate the complex statistical theory behind cointegration into more intuitive terms: "...Economically speaking, two variables will be cointegrated if they have a long-term, or equilibrium, relationship between them. Economic theory is often expressed in equilibrium terms, such as Fisher's quantity theory of money or the theory of purchasing parity (PPP), just to name a few."⁷¹

93. Thus, a cointegration analysis of two economic time series can determine whether there is a long term, equilibrium relationship between the two variables. If there is an equilibrium relationship between two prices, for example, then changes in one price will also be reflected in the other price.

94. The economic reasoning we described earlier would lead us to predict that a successful effort to raise one price will also, in the long term, have an impact on the other optical drive prices to which it is related through both demand and supply-side substitution. Therefore, the existence of a cointegrating statistical relationship between two prices would support the economic reasoning suggesting that success in altering one price is likely to have impact on the other price.

95. There is a large economics literature in which the existence of cointegration among a set of prices is used as a test of whether prices have the stable long-run equilibrium relationships to one another that are predicted by economic theory. Examples include studies of agricultural prices, energy prices, and financial prices.⁷²

time trend variable to the determinants of the linear association between levels of two variables, the true relationship can be correctly estimated.

"It should be pointed out that if a time series is DSP [a difference stationary process] but we treat it as TSP [a trend stationary process], this is called underdifferencing. On the other hand, if a time series is TSP but we treat it as DSP [data generating process], this is called overdifferencing. The consequences of these types of specification errors can be serious, depending on how one handles the serial correlation properties of the resulting error terms." D.N. Gujarati, *Basic Econometrics* 821 (4th ed. McGraw-Hill 2004).

⁷⁰ Gujarati's econometrics text notes that "[c]ointegration means that despite being individually nonstationary, a linear combination of two or more time series can be stationary. The EG, AEG, and CRDW tests can be used to find out if two or more time series are cointegrated." Gujarati, *op. cit.* at 830.

⁷¹ "So to speak, the linear combination cancels out the stochastic trends in the two series. If you take consumption and income as two I(1) [nonstationary] variables, savings defined as (income – consumption) could be I(0) [stationary]. As a result, a regression of consumption on income as in (21.11.1) would be meaningful (i.e., not spurious). In this case we say that the two variables are cointegrated..." Gujarati, *op. cit.* at 822.

⁷² For example, Gordon and Hannesson's study of cod fish prices finds:

"For frozen cod fish prices both the Trace and Maximum Eigenvalue test results show the existence of two cointegrating vectors. Dickey et al. (1991) argues that the more cointegrating vectors that exist, the more stable the long-run price relationship. Consequently, our results are consistent with a long-run price linkage among the four frozen cod prices." D. Gordon & R. Hannesson, *On Prices of Fresh and Frozen Cod Fish in European and U.S. Markets*, 11 *Marine Resource Economics* 4, 232 (Winter 1996).

96. Furthermore, econometric theory says that if a pair of time-trending economic variables are *cointegrated*, standard statistical analysis of levels of economic variables (the least squares techniques which generate correlation and regression coefficients) will correctly and consistently estimate these stable, long run, cointegrating economic relationships, and not spurious ones due solely to underlying and possibly unrelated time trends.⁷³ As Granger put it,

Harri, Muhammad, and Jones, in their study of shrimp prices, note that:

“Several papers have investigated the degree of market integration for spatially distinct agricultural markets through the use of cointegration tests. Examples for several agricultural commodities and markets include Ravallion (1986), Ardeni (1989), Goodwin and Shroeder (1991), Alavalapati, Adamowicz and Luckert ((1997), Sarker (1993), Hänninen, Toppnen and Ruuska (1997), Toppinene and Tiovonon (1998), Murray and Wear (19998) and Prestemon and Holmes (2000). In these studies, the error correction mechanism that drives the cointegrating relationships is assumed to be the spatial arbitrage.” A. Harri, A. Muhammad & K. Jones “*Market Integration for Shrimp and the Effect of Catastrophic Events* at 3, Selected Paper prepared for presentation at the 2010 AAEA, CAES & WAEA Joint Annual Meeting (Denver, CO, July 25-27, 2010).

Fiess and Lederman, in a World Bank study of U.S. and Mexican corn prices note:

“In a world of workably competitive markets where trade is efficient and arbitrage takes place, prices for the same good in geographically separated markets will tend to equalize, so that price differences in the different markets are always less or equal to transport costs (what economists call the law of one price). If a single price drives geographically separated markets, then markets are integrated as a single market. Export concentration, government intervention, and product differentiation all can prevent the emergence of a single market as they drive a wedge between cross-border prices.

One way to study price linkages between the US and Mexican corn market is to test for cointegration between US and Mexican monthly data on corn prices during 1981-2003. We use monthly and annual producer price data for corn. In this context, evidence in favor of the market integration and the law of one price scenario requires that US and Mexican corn prices should share a common trend (be cointegrated), and that the direction of change should be the same. If the coefficients of the cointegration relationship are stable over time or do not change over time, this indicates that the US and Mexican corn markets are well integrated, and that trade and other policies have not affected this price differential.” N. Fiess & D. Lederman, *Mexican Corn: The Effects of NAFTA* at 3 Trade Note 18, The World Bank Group (September 24, 2004).

Sharma’s extensive literature review on linkages among global stock markets, in a typical example, notes that:

“Kanas (1998) analyzes potential linkages between US stock markets and stock markets in UK, Germany, France, Switzerland, Italy and the Netherlands and found that the US does not share long-run relationships with any of these countries. However, contrasting results can be found in Gerrits and Yuce (1999) which finds evidence that the US stock market is cointegrated with Germany, UK, and the Netherlands.” G.D. Sharma & B.S. Bodla, *Are the Global Stock Markets Inter-Linked: Evidence from the Literature* at 31, Global Journal of Management and Business Research (2010).

From Villar and Joutz’s study of crude oil and natural gas prices relationships for the Department of Energy:

“Key highlights of the cointegration analysis of natural gas and crude oil prices include:

- A stable statistically significant relationship between the Henry Hub natural gas price and the WTI crude oil price and trend capturing the relative demand and supply effects over the 1989-through-2005 period was identified.
- Natural gas and crude oil prices have had a stable long-run relationship despite periods when a large exogenous spike in either crude oil or natural gas prices may have produced the appearance that these two prices had decoupled.
- There is a statistically significant trend term, suggesting that natural gas prices appear to be growing at a slightly faster rate than crude oil prices, narrowing the gap between the two over time.” J. Villar and F. Joutz, “The Relationship Between Crude Oil and Natural Gas Prices,” EIA manuscript, October 2006, pp. 6-7.

⁷³ As Wooldridge puts it in his econometrics text, “The issue of cointegration applies when two series are I(1) [nonstationary], but a linear combination of them is I(0) [stationary]; in this case, the regression of one on the other is not spurious, but instead tells us something about the long-run relationship between them.” J. M. Wooldridge, *Econometrics of Cross Section and Panel Data* 571 (2d ed., Cambridge: MIT Press 2010).

“A test for cointegration can be thought of as a pre-test to avoid ‘spurious regression’ situations.”⁷⁴

97. Regressions—and correlations—provide meaningful estimates of parameters and associations when the variables being analyzed are either cointegrated, or stationary. Therefore, it is useful and informative to examine regressions or correlations in these instances.

98. To summarize, then, if one is analyzing time series data in order to determine if there are statistically stable and economically significant patterns of association between two variables which move over time, a two-step procedure can be used if there is concern about spurious correlations.

99. The first step is to determine if the two variables are stationary or trend stationary. If they are, then spurious regression or correlation coefficients will not be an issue, and the standard linear regression model (from which the correlation coefficient can be derived) provides a valid and meaningful summary of the association between two variables.

100. If the variables are not stationary, they may nonetheless be cointegrated if there is a long term equilibrium relationship linking them. We can then test for cointegration using standard statistical procedures. If we reject the null hypothesis that they are not cointegrated, we may conclude that there is an economically meaningful long-run relationship that links the variables. As in the case of stationary variables, when the variables are cointegrated a regression model—and correlation coefficient—“tells us something about the long-run relationship between them.”⁷⁵ A test for cointegration is therefore of great interest in its own right, since it is a test for the existence of a long-run equilibrium economic relationship linking the variables being analyzed.

101. Next, the second step of the analysis, assuming we conclude in the first step that two variables are either stationary or cointegrated, will be to calculate a correlation coefficient, a measure of linear association between two random variables. We will know in this case that the resulting correlation coefficient is meaningful, and not spurious. The correlation coefficient tells us something meaningful about the direction of the long run association between two cointegrated variables, i.e., whether as one rises, the other tends to rise or fall (and the reverse).

102. I have performed an analysis which includes data from firms responsible for over 86 percent of the ODD market, including data from the following defendants: BenQ, Hitachi, HLDS, LG, Lite-On, NEC, Panasonic, Philips, Pioneer, PLDS, Quanta, Samsung, Toshiba, and TSST.⁷⁶ This analysis, included in **Table 2**, establishes a long run relationship between the prices of different types of optical disk drives:

Table 2: Tests for Cointegration of ODD Type Price Indexes

⁷⁴ C.W.J. Granger, *Developments in the Study of Co-Integrated Economic Variables*, 48 Oxford Bulletin of Economics and Statistics 226 (1986).

⁷⁵ Wooldridge, op. cit.

⁷⁶ Techno Systems Research Co., Ltd: 2006 Optical Disc Market Analysis; Techno Systems Research Co., Ltd: 2007 Optical Disc Market Analysis; and Techno Systems Research Co., Ltd: 2008 Optical Disc Market Analysis.

Price Indexes		No. of Tests Showing Stationarity ¹	No. of Tests Showing Cointegration ²	Correlation	Lag ³	N
DVDROM	Combo	0	4	0.967	1	89
DVDRW	Combo	1	3	0.962	12	76
DVDROM	DVDRW	2	2	0.877	12	94

¹ Stationarity is determined by Johansen's trace statistic at 95 and 99 percent confidence.

² Number of cointegrating equations chosen using SBIC, HQIC, and Johansen's trace statistic at 95 and 99 percent confidence.

³ Lag selected based on "consensus" across different lag-order selection statistics (LR, FPE, AIC, HQIC, and SBIC) from vector autoregression model. In the event of a tie amongst the lag selection criteria, HQIC and SBIC are used due to their theoretical superiority. See Lütkepohl, H., *New Introduction to Multiple Time Series Analysis*, New York: Springer, (2005) pp. 148-152.

Source: Cointegration—drivetype.do

103. Based on the documentary evidence I have examined and customer market shares,⁷⁷ it appears that Dell and HP were likely to be the only companies that might have faced qualitatively different pricing of ODDs.

104. I test for the existence of a cohesive economic relationship between prices paid by one set of customers (Dell and HP) and prices paid by other purchasers, using all complete transactional data.⁷⁸ In these cointegration analyses, I find strong evidence of equilibrium relationships between prices paid by these customer groups for particular types of drives, as well as replicating my original findings—of equilibrium relationships between prices for different types of drives—using the expanded transactional dataset I have now created. **Table 3** confirms the market linkages across ODD types and customers:

⁷⁷ Between 2005-2008, Dell accounted for 30.4% of the ODD market and HP accounted for 23.6% of the ODD market; however, the next largest customer, Apple, accounted for 5.8% of the ODD market.

⁷⁸ Prices, by drive type, were measured by Fisher ideal price indexes that I constructed from the expanded transactional dataset. Note that I also used a more flexible specification allowing for possible deterministic time trends in the new cointegration analysis, extending the specification used in my original reports.

Table 3: Tests for Cointegration of Price Indexes for Dell/HP and Other ODD Customers by ODD Type

Price Indexes		No. of Tests Showing Stationarity ¹	No. of Tests Showing Cointegration ²	Correlation	Lag ³	N
Dell and HP	Other					
Combo	Combo	0	1	0.980	4	89
DVDROM	Combo	0	4	0.964	1	92
DVDRW	Combo	0	4	0.977	1	84
Combo	DVDROM	1	1	0.971	7	89
DVDROM	DVDROM	0	4	0.983	1	107
DVDRW	DVDROM	2	2	0.973	1	99
Combo	DVDRW	2	2	0.951	12	82
DVDROM	DVDRW	1	3	0.869	12	94
DVDRW	DVDRW	2	2	0.956	12	88

¹ Stationarity is determined by Johansen's trace statistic at 95 and 99 percent confidence.

² Number of cointegrating equations chosen using SBIC, HQIC, and Johansen's trace statistic at 95 and 99 percent confidence.

³ Lag selected based on "consensus" across different lag-order selection statistics (LR, FPE, AIC, HQIC, and SBIC) from vector autoregression model. In the event of a tie amongst the lag selection criteria, HQIC and SBIC are used due to their theoretical superiority. See Lütkepohl, H., *New Introduction to Multiple Time Series Analysis*, New York: Springer, (2005) pp. 148-152.

Source: Cointegration--DELLHP_OTHER.do

105. One could also consider different groupings of customers, but I have not seen any compelling evidence that indicates a need to further disaggregate customer groups. Nonetheless, as a robustness check, I test for long run price relationships between Dell/HP and a more disaggregated “other” customer category across common types of optical disk drives, which is given in **Table 4:**

Table 4: Tests for Cointegration of Price Indexes for Dell/HP and Other Disaggregate Groups of ODD Customers by ODD Type

Price Indexes		No. of Tests Showing Stationarity ¹	No. of Tests Showing Cointegration ²	Correlation	Lag ³	N
COMBO						
Dell/HP	Distributor	0	3	0.934	2	74
Dell/HP	ODM_EMS	2	2	0.990	6	74
Dell/HP	OEM	2	2	0.981	5	82
Dell/HP	Other_OEM	0	4	0.973	1	70
Dell/HP	Retailer	2	2	0.936	11	65
Dell/HP	Unknown	0	3	0.974	9	84
DVDROM						
Dell/HP	Distributor	1	2	0.899	12	96
Dell/HP	ODM_EMS	2	2	0.979	1	107
Dell/HP	OEM	2	2	0.960	1	107
Dell/HP	Other_OEM	2	2	0.957	1	104
Dell/HP	Retailer	1	2	-0.579	1	91
Dell/HP	Unknown	1	3	0.982	8	100
DVDRW						
Dell/HP	Distributor	2	2	0.987	11	89
Dell/HP	ODM_EMS	2	2	0.992	12	88
Dell/HP	OEM	2	2	0.990	10	90
Dell/HP	Other_OEM	2	2	0.987	11	89
Dell/HP	Retailer	2	2	0.881	10	90
Dell/HP	Unknown	2	2	0.886	12	88

¹ Stationarity is determined by Johansen's trace statistic at 95 and 99 percent confidence.

² Number of cointegrating equations chosen using SBIC, HQIC, and Johansen's trace statistic at 95 and 99 percent confidence.

³ Lag selected based on "consensus" across different lag-order selection statistics (LR, FPE, AIC, HQIC, and SBIC) from vector autoregression model. In the event of a tie amongst the lag selection criteria, HQIC and SBIC are used due to their theoretical superiority. See Lütkepohl, H., *New Introduction to Multiple Time Series Analysis*, New York: Springer, (2005) pp. 148-152.

Source: coint_customer.do

106. It is important to note that my cointegration analysis establishes that these relationships among prices for different ODD types and customers are **NOT** a spurious artifact of these prices simply declining over time (as might be the case, for example, with a simple correlation coefficient). Cointegration is a much stronger concept than correlation: Johansen, the developer of one of the cointegration tests used in this report, points out that "...a shock to one

[cointegrated] variable implies a shock to all [other cointegrated] variables in the long run...”⁷⁹ Testing for cointegration between two prices basically tests that the movement of the two prices with a trend over time is either approximately or roughly parallel, or mirror images, i.e., that as one price experiences an upward blip or deviation from the general long run downward trend, the other too must generally experience either an approximately parallel blip, or alternatively, that as one blips up, the other tends to dip down, in a mirror image. Similarly, as one price experiences a greater than average downward dip, the other price must roughly experience either a parallel, or mirror-image and opposite, movement over time.

107. Thus, the wiggles and waggles around some downward trend must be roughly connected together over time in order to find cointegration in the two series. As econometrician Herman Bierens explains, the most commonly found empirical scenario for cointegrated economic variables is parallel movement over time: “For bivariate economic I(1) processes, cointegration often manifests itself by more or less parallel shapes of the plots of the two series involved.”⁸⁰

108. Note that two economic variables that are correlated because of the fact of a common decline over time, but do not exhibit either these roughly parallel or mirror image movements as they decline, can be correlated, but will **NOT** be cointegrated. This situation is called “spurious correlation”, because a statistically significant correlation coefficient does NOT establish that the relationship in movements over time is caused by a genuine economic equilibrium relationship between the two variables. Instead, a cointegration analysis must be performed to test whether a genuine economic relationship links the movements of the two variables over time. In this sense, a cointegration test is a test for structural economic cohesion among variables with time trends.

109. Cointegration tests were performed in my initial and reply reports, and confirmed that prices for different ODD drives are cointegrated.⁸¹ My new results show that prices for different customer groups are also cointegrated, and thus continue to verify the predictions of economic theory and the documentary record—that the economic forces of substitution in supply and demand link prices for different drives to different customers together in the market. Thus, it is important to recognize that the additional “complexity” of this analysis addresses precisely an issue that both defendant experts and the Court have raised in the past, that correlation by itself could be a spurious indicator of a market wide impact, in the presence of declines over time for any two prices. **The cointegration analysis establishes that these comovements are tightly linked and are not a spurious artifact of coincidental decline over time.**

⁷⁹ S. Johansen, *Likelihood-Based Inference in Cointegrated Vector Autoregressive Models* 50 (Oxford University Press 2009).

⁸⁰ H.J. Bierens, *Cointegration Analysis*, April 2010, available at <http://grizzly.la.psu.edu/~hbierens/COINT.PDF>, p. 1. Note that this paper is an updated and extended version of *Cointegration Analysis*, in C. Heij, J.M. Schumacher, B. Hanzon and C. Praagman (eds.), *System Dynamics in Economic and Financial Models* 217-46 (John Wiley 1997).

⁸¹ In some cases, some of the tests may suggest that prices are stationary, rather than being cointegrated. However, this is not an issue. Variables must be non-stationary (i.e., have random trends) in order to be cointegrated. With stationary variables that have no apparent trend over time, however, there is no problem of “spurious correlation” in interpreting correlation coefficients as a valid measure of association between two variables.

C. Granger Causality Analysis

110. My cointegration analysis establishes that correlations amongst prices for different products sold to different customers are not spurious, and are not simply produced by the fact of these prices merely declining over time, as prices typically do in this industry. Concerns have previously been expressed that common economic factors other than substitution across the products made by different producers on the supply side, and substitution among products purchased by different customers on the demand side, could explain the apparent economic equilibrium comovement of these various prices. In responding to this concern, I note that one major factor that economic theory also predicts will affect prices is costs—indeed the relationship between cost and prices predicted by economic theory is the basis for the prediction of well-established economic theory (and a large empirical economics literature) that cost changes will get “passed-through” into prices.

111. So it would be correct to argue that common shifts or trends in costs for different products might, in principle, also be expected to create an economic relationship between, and common comovement among, observed prices, even if the forces of economic substitution in supply and demand were not already reasons for their apparent observed economic cohesion. ***As a further test*** of the conclusions of the cointegration analysis, I therefore have tested whether changes in one product’s market price or cost caused changes in another market price after controlling for the other product’s history of both prices and costs, in addition to accounting for potential trends over time. To do so, I employed the concept of ***Granger causality***.

112. Granger causality is a statistical framework that allows inferences to be made on whether or not one variable causes another in a statistical sense. It determines whether past and current realizations of prices or costs have explanatory power in predicting a given price after controlling for other relevant variables. Nobel prize winner Clive Granger explained the idea of Granger causality as follows:

[Nobel Physics prize winner Dennis Gabor] told me to read a paper by the eminent mathematician Norbert Wiener which contained a definition that I might want to consider. It was essentially this definition, somewhat refined and rounded out, that I discussed, together with proposed tests in the mid 1960’s. The statement about causality has just two components: 1. The cause occurs before the effect; and 2. The cause contains information about the effect that that is unique, and is in no other variable. A consequence of these statements is that the causal variable can help forecast the effect variable after other data has first been used.⁸²

113. **Table 5** presents the results of a Granger causality analysis (one of the fundamental advances which won Granger a Nobel Prize in economics in 2003) and shows that typically the prices of ODD types sold to different customer segments are causally related to prices of ODDs sold to other customer segments, even after controlling for any possible

⁸² C.W.J. Granger, *Time Series Analysis, Cointegration, and Applications*, Nobel Prize Lecture (December 2003), available at http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2003/granger-lecture.pdf.

relationship with costs.⁸³ After controlling for the past history of prices and costs for any single type of drive, as well as the cost of those same types of drives sold to Dell and HP, I find that past history of drive prices for Dell and HP still has statistically significant value in predicting current “other customer” drive prices, implying that Dell and HP drive prices cause other customer drive prices, using the statistical definition proposed by Granger and now widely used by economists, other social scientists, statisticians, and even medical and biomedical researchers.⁸⁴ This test for causality is very general, and can be applied to both variables with time trends, as well as variables that are stationary and lack time trends.⁸⁵ Causal relationships are found between Dell and HP drive prices, and other customer drive prices, for all drive types:

Table 5: Granger Causality Tests Show Costs Are Not the Sole Determinant of Price Co-movement

	P-values for Granger Causality of the Other Customers Price Index, by Drive Type		
	<u>Dell/HP Price Index</u>	<u>Dell/HP Cost Index</u>	<u>Other Customers Cost Index</u>
Combo	0.021	0.000	0.003
DVDROM	0.000	0.000	0.000
DVDRW	0.024	0.180	0.328

Source: granger_causality_DellHP_Others.do

Note: Results for each of the three “Other” customers ODD types based on estimating a single model with the price index for “Other” customers, the price index for Dell and HP, the cost index for Dell and HP, and cost index for other customers. The null hypothesis for the test is Granger noncausality and rejection of the null is evidence of Granger causality. For example, if the p-value were .2 for the Dell/HP price index, then we would fail to reject Granger noncausality at a significance level less than 20%.

114. The null hypothesis for the test is Granger non-causality, and rejection of the null is evidence of Granger causality. For example, if the p-value were 0.2 for the Dell/HP price index, then we would fail to reject Granger non-causality at a significance level less than 20%. The upshot of the Granger causality analysis is that prices paid by Dell and HP for ODDs impact the prices charged to other ODD customers. For instance, the p-value of 0.001 reported for

⁸³ The test was performed in a vector autoregressive (VAR) framework allowing costs and ODD prices to vary by drive type and customer. An additional lag was used to allow for the test of Granger causality. Fisher Ideal indexes of Dell/HP and “other customer” prices and costs were constructed and used in this analysis. Details of the statistical procedure can be found in H. Y Toda & T. Yamamoto, *Statistical Inferences In Vector Autoregressions With Possibly Integrated Processes*, 66 Journal of Econometrics 225-50 (1995).

⁸⁴ See S.L. Bressler & A.K. Seth, *Wiener–Granger Causality: A Well Established Methodology*, 58 Neuroimage 2, 323-29 (Sept. 15, 2011). For an elementary introduction, with useful examples of the application of Granger causality in economics, see D.N. Gujarati, *Basic Econometrics* 696-702 (4th ed. McGraw-Hill 2004).

⁸⁵ Toda and Yamamoto, op. cit., describe a method which works with both stationary and non-stationary variables.

Dell/HP DVD-RW purchase prices in the model for “other customer” DVD-RW prices implies that these other customer prices are causally related to Dell/HP DVD-RW prices, even after accounting for the past history of “other customer” DVD-RW prices and costs, and Dell/HP DVD-RW costs. As explained in the Reference Manual on Scientific Evidence, published by the Federal Judicial Center, a p-value is the “significance level in a statistical test; the probability of getting a test statistic as extreme or more extreme than the observed value. The larger the p-value, the more likely that the null hypothesis is valid.”⁸⁶

115. In this same model, we cannot reject the hypothesis that Dell DVD-RW costs do not cause “other customer” DVD-RW prices (with a p-value of 0.363). For DVD-RWs, then, Dell/HP product prices are an important and statistically significant predictor for DVD-RW prices for other customers, while Dell/HP costs are not. Thus, causal relationships exist between Dell, HP, and other customer ODD prices, even after allowing for co-movement related to common costs. This explicitly eliminates the possibility that the apparent cohesion among the prices reflects instead a spurious correlation among these prices related to common cost declines over time. (The existence of an underlying economic equilibrium relationship explaining cohesive movement over time was also tested by the cointegration analysis, which eliminated the possibility that trends over time could have created a coincidental, spurious correlation.)

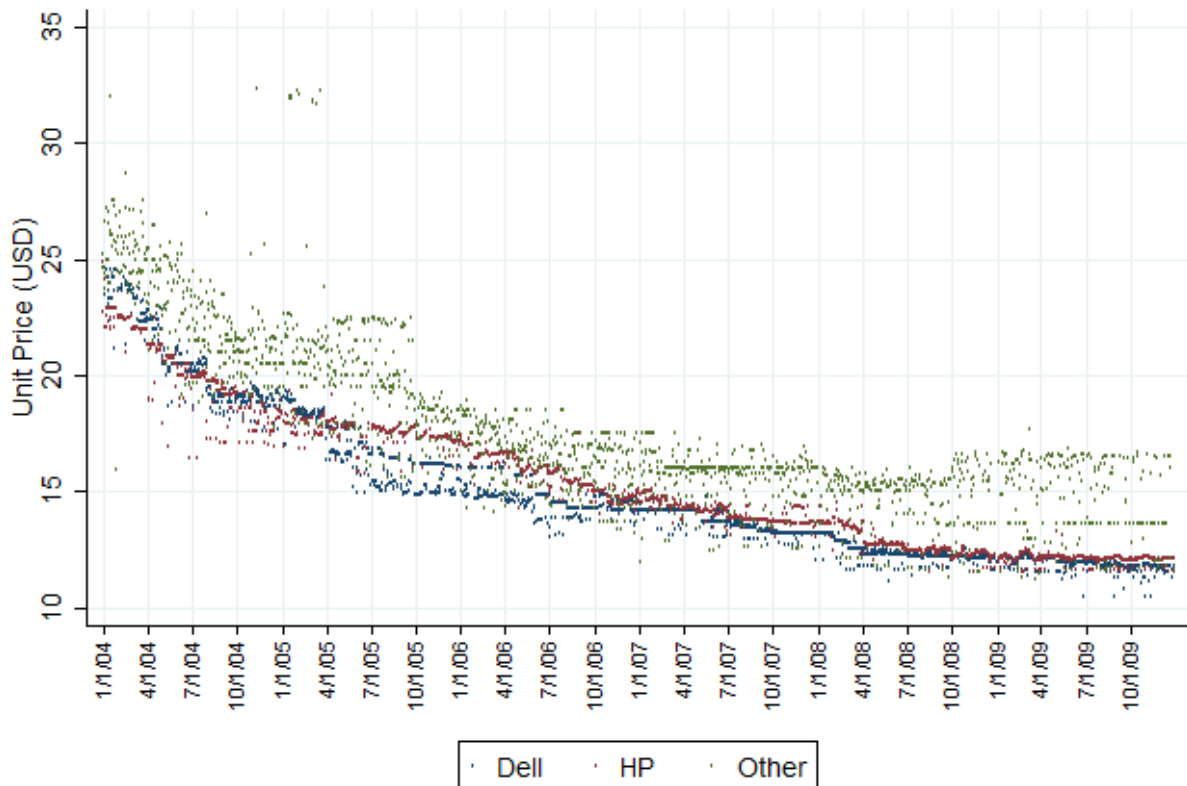
116. To summarize, then, economic theory predicts that demand and supply substitution would create or contribute to a cohesive, cointegrated, equilibrium economic relationship among prices for different ODD types and customer groups. Common costs might be one factor that could create the observed cointegrated, equilibrium economic relationship among ODD prices, but economic theory also predicts that other factors, including demand and supply substitution, would also create or contribute to a cohesive equilibrium economic relationship among prices for different ODD types and customer groups. My analysis of Granger causality shows that even after controlling for potential common costs and trends over time, changes in ODD prices in sales to HP and Dell caused price movements among drives sold to other ODD purchasers, as would be predicted by the economic logic of the demand and supply substitution that I have shown exists in this industry (in previous reports).

D. Defendants Agree that Prices of ODDs Sold to HP and Dell Formed the Benchmark in the Industry, Further Lending Support to the Cohesiveness of the ODD Market

117. I have performed further analysis which confirms that Dell and HP sales generally created a benchmark floor for prices in the industry.⁸⁷ **Figure 9** demonstrates this point:

⁸⁶ Daniel L. Rubinfeld, *Reference Guide on Multiple Regression*, in Reference Manual on Statistical Evidence 354 (3d ed. 2011).

⁸⁷ Defendants agree. Dr. Ordover testified that “Dell and HP’s transaction prices . . . were significantly lower than the vast majority of transactions in every customer channel.” See Declaration of Dr. Janusz Ordover in Support of Defendants’ Opposition to Class Certification (“Ordover Report”), ¶ 94 (dated Oct. 21, 2013).

Figure 9: Dell and HP Act as a Benchmark Floor for Prices in the Industry

Source: Defendant sales data. See backup.

Note: Daily median unit prices paid by Dell, HP, and other customers for DVD-ROM HH Internal drives. Includes sales to customers with U.S. ship-to locations. The following transactions are excluded: 1) inter-defendant sales and internal transfers, 2) transactions with prices greater than five times or less than one fifth of the median price for each ODD model, and 3) transactions with prices more than two standard deviations from the quarterly average price for the ODD type.

118. **Table 6** further confirms that *across all customer channels*, other customers paid more for a DVD-ROM half-height drive than did Dell or HP:

Table 6: Share of Customer Transactions at Prices Greater than Dell or HP (2004-2009)

Customer Channel	Greater than Dell	At Least 10% Greater	At Least 20% Greater	Greater than HP	At Least 10% Greater	At Least 20% Greater
Other Computer OEMs	79.1%	50.8%	14.5%	77.1%	38.1%	8.7%
Distributors	93.9%	65.9%	19.6%	92.7%	56.5%	17.3%
Retailers	99.7%	97.1%	83.5%	99.5%	94.8%	83.1%
ODM/EMS	70.7%	23.4%	6.5%	57.4%	17.5%	4.3%
Other OEMs	97.2%	65.5%	14.7%	92.1%	53.1%	11.5%
Unclassified Customers	82.7%	47.9%	18.6%	76.8%	36.1%	11.5%
Average	88.4%	60.2%	23.9%	85.3%	50.7%	20.4%

Source: Defendant sales data. See backup.

Note: Other customer transactions for DVD-ROM HH Internal drives are compared to Dell and HP transactions that occur during the same week for the same drive type. The percentages represent the share of other customer transactions for which the price exceeds the maximum Dell or HP price recorded for that week. Includes sales to customers with U.S. ship-to locations. The following transactions are excluded: 1) inter-defendant sales and internal transfers, 2) transactions with prices greater than five times or less than one fifth of the median price for each ODD model, and 3) transactions with prices more than two standard deviations from the quarterly average price for the ODD type.

119. I have also performed an analysis that tests the relationship between Dell/HP prices and other customer prices. See **Table 7** below. For DVD-RW, DVD-ROM and Combo drives, the price gap between Dell/HP and other customers stayed the same or widened somewhat, and did not narrow during the collusive period.⁸⁸ (The same pattern is evident in my overcharge model, described below.) For Combo drives, half the price gap coefficients between Dell/HP and other customers were negative, but not significantly different from zero statistically; that is, we cannot reject the price gap being constant in these instances as well. For Combo and DVD-ROM drives, we cannot reject the hypothesis that the price gap between Dell/HP and HP remained constant; for DVD-RW drives, we reject constancy--the Dell/HP price gap actually increased during the class period, as other customers were hit with significantly higher overcharges than Dell/HP.

⁸⁸ I run separate regressions for each drive type. For each regression, I pool data for all periods. I then interact time-period dummy variables with all of the variables used in my hedonic price equations. These control variables include dummy variables for ODD size, external/internal characteristics, drive speed, and location. Quantity is also included interacted with time periods. In addition, I include dummy variables for each customer type, though these variables are not interacted with time periods. Instead, customer type variables are interacted with a single dummy variable for the collusion period. This latter set of interactions is reported in Table NO_REDUCED_GAP.

Table 7: There Was No “Reduced Price Gap” During the Collusive Period

Customer type	Combo							DVDROM							DVDRW						
	Observations			Model Results				Observations			Model Results				Observations			Model Results			
	Non Cartel	Cartel	Total	Coef	Std.Err.	t-stat	p-val	Non Cartel	Cartel	Total	Coef	Std.Err.	t-stat	p-val	Non Cartel	Cartel	Total	Coef	Std.Err.	t-stat	p-val
Dell/HP	1,895	155,713	157,608	0.000		(omitted)		54,551	123,762	178,313	0.000		(omitted)		89,860	142,201	232,061	0.000		(omitted)	
Distributor	559	17,857	18,416	0.009	0.052	0.18	0.86	4,762	14,223	18,985	0.053	0.024	2.22	0.03	18,907	42,671	61,578	0.082	0.036	2.28	0.02
ODM/EMS	103	4,251	4,354	-0.072	0.048	-1.50	0.13	4,277	4,639	8,916	0.074	0.014	5.19	0.00	9,754	6,368	16,122	0.051	0.024	2.16	0.03
OEM	539	14,824	15,363	0.035	0.034	1.01	0.31	12,491	15,605	28,096	0.031	0.015	2.08	0.04	30,971	27,874	58,845	0.057	0.027	2.13	0.03
Other OEM	12	5,688	5,700	-0.262	0.181	-1.45	0.15	379	4,150	4,529	0.071	0.094	0.75	0.45	859	3,233	4,092	0.141	0.035	4.05	0.00
Retailer	147	8,323	8,470	-0.034	0.072	-0.47	0.64	2,171	3,728	5,899	0.076	0.078	0.98	0.33	37,106	68,972	106,078	0.169	0.050	3.36	0.00
Unknown	669	39,250	39,919	-0.096	0.076	-1.27	0.21	10,460	31,040	41,500	0.027	0.017	1.56	0.12	43,320	67,134	110,454	0.041	0.043	0.95	0.34
Defendant	1,678	29,704	31,382	0.008	0.053	0.16	0.88	7,943	22,546	30,489	0.058	0.036	1.59	0.11	38,811	62,295	101,106	0.090	0.036	2.53	0.01
F (Ho: coefficients are equal)				1.48							1.64							4.14			
p-value				0.18							0.13							0.00			
Sources: Defendant Data. See R2_Code.do.																					

120. I noted in my previous report⁸⁹ that even in the most homogeneous, and near-textbook perfect examples of competitive real world markets, there is always some dispersion of prices by customer, around the market mean. Indeed, all measurements of “competitive market price” for even these most homogeneous of real world product markets (e.g., wheat, oil) are simply the mean of observed transactional prices across a group of customers defined over some period of time and set of locations in space.⁹⁰

121. In the *but-for* world, by assumption, the same factors (volume, sales channel, region) and even purely idiosyncratic random deviations from the average market price facing these customers as a group would still be observed, yet price to all would rise because the market price for these “other” customers as a group would still be higher. Any systematic or purely random deviations from the real world market average for the “other customer” group would still be observed, but represent displacements from a lower overall average in the *but-for* world, and hence price for all would be lower by virtue of the lower *but-for* mean relative to which each customer’s price would have been positioned.

E. Relationships Between ODD Customers Ensured Impact Across ODD Types

122. Defendants have acknowledged that HP and Dell prices were a floor for ODD pricing to other smaller customers, but erroneously have claimed that HP and Dell prices had no impact on other customers. But in fact, there was a well understood and accepted pricing structure in the industry, with distributor prices, on average, set at well understood and accepted levels above prices for the largest OEMS.⁹¹

⁸⁹ Flamm I, ¶¶ 81-105; Flamm II, ¶¶ 5-19.

⁹⁰ *Ibid.*

⁹¹ PNA-CIV0000448709 at 11, ODDCIV-003649753, ODDCIV-003392312.

[REDACTED]

123. Similarly, HP acquired ODDs from independent “grey” market distributor Horizon, then asked LGE to re-flash the firmware of these “open market” LG drives with HP-specific firmware.⁹⁴

124. When retail prices sank to levels approaching distributor pricing, ODD producers were careful to pressure retailers to raise their prices.⁹⁵ On other occasions, ODD producers complained about ODMs selling excess inventory to grey market distributors, and creating downward pressure on their distributor prices.⁹⁶ It is clear that retailers and distributors are constantly checking each other’s prices online, and that OEMs too were well aware of retailer and distributor pricing, and had access to this information when negotiating their volume purchasing prices.⁹⁷

125. PLDS transactions sales data shows a web of transactions linking buyers in different market segments. (Transfers across channels can be documented when the “Bill To” (BT) customer is different from the “Ship To” (ST) recipient of the physical product shipped by ODD producer PLDS.) Virtually every market segment bought some volume of products from firms operating in other market segments, selling their excess purchases to other market segments as needed, and buying opportunistically from other firms to take advantage of product availability and advantageous pricing in other channels. Note in particular that HP, in addition to buying products from ODD manufacturers directly (or negotiating ODD prices that are built into the cost of assemblies it buys from Electronics Manufacturing Services (“EMS”) manufacturers), bought ODDs from distributors (like Synnex) and EMS providers (like Shin Shin) as needed.

126. Also, note that ODM/EMS providers like Solectron, Hon Hai (Foxconn), Sanmina/SCI, Celestica, etc., typically buy products on behalf of their OEM clients, at prices that they either negotiate, or, for large OEM customers, like Dell or HP, the OEMs negotiate. The prices of the components are often included in the prices for the contract manufacturing services provided by the EMS companies. In other cases, the large OEM (like Dell or HP) may buy the product, then have it drop shipped directly to the EMS.

127. The bottom line is that EMS companies, who negotiated directly to buy ODDs on behalf of their smaller clients, or order them from distributors for these smaller volume clients, often have substantial insight on the ODD prices charged to OEMs like Dell and HP, which they may fold into the prices they quote for their assemblies to Dell and HP. The ODM/EMS providers therefore can have an excellent idea of what Dell and HP are being charged, as well as

⁹² DELL-ODD-00099321.

⁹³ [REDACTED] of Dell. [REDACTED]

⁹⁴ HLDS_CIV003432856.

⁹⁵ SEC-ODD-000742220.

⁹⁶ PNA-CIV0000501349.

⁹⁷ HLDS-CIV2113590.

distributor pricing, when they are negotiating with ODD producers or distributors on behalf of their other customers. If Dell and HP prices increased by more than the quotes to ODM/EMS providers by the ODD producers directly, or distributors, indirectly, then the ODM/EMS providers could have offered a better price to Dell and HP and make a profit to boot. The fact that this mainly did not happen means that the ODD producers were largely successful in maintaining the required alignment of pricing across distribution channels. The ODMs, EMS providers, and distributors participated in a secondary market for sales of volumes of ODDs that effectively would have allowed arbitrage between marketing channels had Dell and HP prices stabilized, or not fallen as fast, without a corresponding deceleration in the rate of price decline through other distribution channels.⁹⁸

128. The fact that Dell and HP bought relatively small volumes from distributors attests to the fact that the ODD producers were largely successful in making sure that the pricing structure they maintained between different distribution channels was sustained.

IV. OVERCHARGES ON ODDS

A. Methods for Computing Overcharges

129. This section describes the econometric methods I used to estimate the effect of the conspiracy on the overall price level for ODDs purchased by the indirect purchaser class and other parties. I employed standard statistical tools to model the evolution of ODD prices through time as a function of variables measuring important determinants of supply and demand. The model also estimates the effectiveness of the cartel in elevating price over time, which allows me to determine what the price would have been but for the conspiracy (the “but-for” price). The differences between the actual and but-for prices reflect the extent to which the conspiracy elevated prices. In the following subsections, I summarize the methods and procedures used to specify the model, estimate it, and compute the overcharges.

B. Aggregation Is Appropriate and Advantageous

130. To evaluate the Plaintiffs’ allegation that collusive behavior among the defendants resulted in an increase in the market price of the products affected by the collusive behavior, it is necessary to analyze how that behavior would have affected some notion of a “market price”.

131. Any empirical realization of the theoretical concept of a market price for even the most homogeneous of commodities is defined as an average price. For example, weekly measures of consumer market price for various grades of gasoline published by the U.S. government are a weighted average of sampled prices at 8AM Monday morning at a sample of retail gas outlets.⁹⁹ Similarly, when the Department of Agriculture publishes a market price for

⁹⁸ Brian Clark Dep. Tr. (ASI) at 58:20-59:02.

⁹⁹ “Every Monday, retail prices for all three grades of gasoline are collected by telephone from a sample of approximately 800 retail gasoline outlets. The prices are published around 5:00 p.m. ET Monday, except on government holidays, when the data are released on Tuesday (but still represent Monday’s price). The reported price includes all taxes and is the pump price paid by a consumer as of 8:00 A.M. Monday. This price represents the self-serve price except in areas having only full-serve. The price data are used to calculate weighted average price estimates at the city, state, regional and national levels using sales and delivery volume data from other EIA surveys

homogeneous products sold by farmers (durum wheat, or soybeans, for example), the monthly price published is a weighted average of prices received by farmers in a sample of grain mills and elevators.¹⁰⁰ Similarly, when the Bureau of Labor Statistics of the Census Bureau go out and measure changes in prices for individual products or commodities in their producer and consumer price indexes, they average individual transaction prices for even the most finely detailed commodities.¹⁰¹

132. The defendants themselves have observed that ODDs are a commodity product,¹⁰² and it is important to note that assessing the impact of collusive behavior on the market price for that commodity means analyzing its impact on the average price recorded for some well-defined group of transactions.

133. Considerable empirical economic evidence supports the observation that even for homogeneous commodities sold in nearly perfectly competitive markets, there will be considerable heterogeneity in the individual transaction prices at which consumers purchase these homogeneous products.¹⁰³ This has been interpreted by the empirical economic literature as reflecting several factors:¹⁰⁴

and population estimates from the Bureau of Census.” See http://www.eia.gov/dnav/pet/TblDefs/pet_pri_gnd_tbldef2.asp.

¹⁰⁰ “Survey procedures: Primary sales data used to determine grain prices were obtained from probability samples of about 1900 mills and elevators. These procedures ensure that virtually all grain moving into commercial channels has a chance of being included in the survey. Generally, States surveyed account for 90 percent or more of total United States production. Livestock prices are obtained from packers, stockyards, auctions, dealers, and market check data from AMS-USDA, private marketing organizations, and state commodity groups and agencies. Inter-farm sales of grain and livestock are not included since they represent very small percentages of the total sales. Grain marketed for seed is also excluded. Fruit and vegetable prices are obtained from sample surveys and market check data from AMS-USDA, private marketing organizations, state agencies, and universities.

Summary and estimation procedures: Survey quantities sold are expanded by strata to state levels and used to weight average strata prices to a state average. State prices are then weighted to a United States price based on expanded sales. Recommendations are prepared by the State Field Offices and reviewed by the Agricultural Statistics Board in Washington, D.C. State recommendations are reviewed for reasonableness with survey data, other States, and recent historic estimates.

Revisions: For most items, the current month’s preliminary price represents a 3-5 day period around the 15th of the month. Previous month’s prices represent actual dollars received for quantities sold during the entire month. Revisions are published in monthly issues of Agricultural Prices.” See <http://www.usda.gov/nass/PUBS/TODAYRPT/agpr0114.pdf> at 60.

¹⁰¹ “A price index for even the most finely detailed commodity or product (usually termed a cell index) cannot be calculated without applying a policy for weighting the individual prices reported to the BLS for each item. Reports from some establishments are given more weight than those from others, in accordance with value-of-shipments data provided to BLS field representatives during the initiation interviews with reporting establishments. The data are adjusted by BLS probability selection techniques.” See <http://www.bls.gov/opub/hom/pdf/homch14.pdf> at 7.

¹⁰² HLDS_CIV1982473 at 10.

¹⁰³ For some recent studies, and reviews of the empirical literature on price dispersion in markets for homogeneous products, see for example, G. Kaplan & G. Menzio, *The Morphology of Price Dispersion*, Working Paper 19877, National Bureau of Economic Research (Cambridge MA 2014); B. Eden, *Price Dispersion and Demand Uncertainty: Evidence From US Scanner Data*, Technical Report, Vanderbilt University Department of Economics (2013).

¹⁰⁴ Kaplan and Menzio, 2014, op. cit.

- Heterogeneity across buyers in the costs of searching for the lowest price across sales outlets;
- Heterogeneity across consumers in enjoyment of the shopping experience;
- Heterogeneity across sellers in the level of service provided with the sale
- Heterogeneity across buyers in the volume of items purchased (economies of scale in transaction volume)

134. Therefore, the very concept of a market price is a notion of an average price, from which individual transactions may have idiosyncratic, random deviations, reflecting a random distribution of the above factors among individual consumers. All statistical models of price are models of a conditional mean price, that is, the average price paid conditional on all systematic factors controlled for in the statistical regression equation. An actual, realized price paid is the conditional mean price (what is estimated statistically by the regression model) plus an idiosyncratic disturbance term unique to the purchaser at the time of purchase. Even if one were fortunate enough to have multiple observations of purchases of a product by a single purchaser, a statistical regression model measuring the effect of various factors on the purchase price would estimate the mean (average) price conditional on measured values for these factors, and leave unexplained some residual, idiosyncratic variation in price.

135. All empirical regression models of transactional prices model this concept of an average market price, while controlling for possible systematic differences across distinct groups of producers and buyers. There are numerous examples of statistical modeling of transaction prices in the empirical economic literature that implement an approach similar to that I employed in my original report.¹⁰⁵ Systematic deviations from the average from some group can be controlled for with appropriate variables, as I do in my statistical models.

136. Conceptually, the effect of collusion in elevating market price would amount to an upward shift in the mean (average) price around which individual transaction prices are distributed, because of unobserved heterogeneity. The “*but-for*” construct, which I understand is required by law to be used to assess the impact of the alleged collusion on the realized price for every individual, takes as fixed any degree of idiosyncratic individual deviation from the relevant market price (by definition an average), conditional on observed systematic influences on the transaction price. The effect of the alleged collusion in elevating a market price is just its success, or lack thereof, in shifting this mean market price; idiosyncratic transactional deviations from this shifted “*but for*” mean are maintained at their real world values in the “*but for*” world too. The effect of the collusion is then to elevate all realized individual prices by the shift in the actual market price from the hypothetical “*but for*” market price.

¹⁰⁵ See for example, A. Ghose & Y. Yao, *Using Transaction Prices to Re-Examine Price Dispersion in Electronic Markets*, 22 Information Systems Research 2 (2011); R. Venkatesan, K. Mehta & R. Bapna, *Do Market Characteristics Impact The Influence Of Retailer Characteristics On Online Prices?* 83 J. Retailing 3 (2007); X. Xing, Z. Yang & F. Tang, *A Comparison of Time-Varying Online Price and Price Dispersion Between Multichannel and Dotcom DVD Retailers*, 20 J. Interactive Marketing (2006).

137. **Figure 10** illustrates this conceptual framework for the “*but for*” transactional price. Depicted are six individual transactions for an optical disk drive model sold at two retail stores with common costs for this product, in some given time period. (Transactions 1-3 take place at one store, transactions 4-6 at the other store). The orange dotted line represents the mean price for the product in the real (allegedly collusively inflated price) world, the lower orange solid line the average price of a retailer who is temporarily offering the product at cost in order to increase foot traffic to her store, the upper orange solid line the average price of a retailer who is charging a price reflecting normal markup to cover overhead and profit on a sale. Consumer 1 pays the listed shelf price, consumer 2 is a member of a frequent shopper’s club and gets a discount off of advertised price, and consumer 3 puts a lot of effort into shopping and has managed to get his price lowered slightly more by negotiating and convincing the store to match the advertised price of an internet vendor. Consumers 4, 5, and 6 have the same profiles, but are shopping at the store not currently adopting the loss leader strategy. “But for” the collusion, the common cost of the product to both stores would have been lower, by the same percent, and both orange solid lines would have dropped to their respective green solid line level, while the average price for the retail market as a whole would have dropped from the orange dotted line to the green dotted line. The “*but-for*” exercise assumes that the realized idiosyncratic deviations from the market mean (the orange brackets for individual consumers, the blue brackets for the stores) would be maintained at observed values in the “*but-for*” world, were the modeled market mean (the dotted line) to be lowered as shown as the result of the collusion not occurring. That is, if we maintain the same shopping and retailing strategies momentarily adopted by consumers and retailers in the real world at this moment in time in the “*but-for*” world, an assumption that is implicit in the “but for” construct, the change in the conditional mean (average) price for this market is precisely the impact of collusion.

Figure 10: Idiosyncratic Deviations from Statistically Modeled Conditional Mean Prices Are Maintained in the "But-For" World Construct



138. The key point here is that diversity in price, variation in price across transaction, is not an obstacle to modeling the impact of collusion on prices for all transactions. After observable sources of differences in price are accounted for by the regression model, then any remaining idiosyncratic sources of variation can then be thought of as being maintained at actual realized values when the “but for” price in every transaction is predicted.

139. Thus, a *but-for* analysis of what price would have been, absent the alleged collusive behavior:

- a. Controls for systematic, observable factors creating deviations from an appropriate market (average) price.
- b. The “*but-for*” construct takes idiosyncratic, random deviations from the average market price, conditional on controlled factors, for individual transactions as fixed and identical in both the real and “*but-for*” worlds.
- c. Given (b), it is straightforward to see that the effect of a cartel can be simply and reliably estimated as the effect of the cartel in raising the average market price after controlling for any and all systematic deviations that are created by controlled factors.
- d. Effectively, individual idiosyncratic deviations from a mean price that controls for systematic sources of deviation from an overall group, are preserved in the *but-for* world.

140. In addition, averaging prices over individual transactions brings further benefits. Averaging individual data for a given subgroup over time reduces measurement error in measured covariates for that subgroup, while allowing estimation of the same subgroup mean that would be estimated with a regression model. Averaging, therefore, by reducing measurement error, can reduce the bias associated with measurement error. This is easily demonstrated in a simple simulation experiment, such as the pass-through example I discuss in detail below in section V.C.1.

C. Estimation of Overcharge

141. I have been asked to assume that the collusion between defendants began at least as far back as April of 2003, the beginning of the class period. Documents I have reviewed support this conclusion.¹⁰⁶ I have also been asked to assume that at least one defendant attempted to commence cooperation with law enforcement officials in January of 2009. By June of 2009, subpoenas from the DOJ apparently had been received by the defendants, and defendant offices were raided by governmental authorities. Thus, we can think of January through June of 2009 as a period when the collusive activities by the defendants were being terminated, voluntarily or involuntarily. Accordingly, I will treat the period of January through June of 2009 as a distinctive, ending phase in the operations of the cartel. However, one would not necessarily expect prices to immediately fall back to competitive levels. Also, it is possible to maintain

¹⁰⁶ See **HLDS_CIV0009970**: LGE expense report dated 8/30/01, documents an in-person meeting with Samsung: "Samsung: OS information sharing."

PNA-CIV0000209236: email dated 8/8/02, documents Panasonic receiving competitive information about Pioneer and Toshiba's prices from OEM Sony.

PNA-CIV0000200259: email dated 2/5/02, documents HLDS and Panasonic exchanging roadmaps and price information for Compaq, HP, and Dell in person.

ODD-CIV-005068278: email dated 8/6/02, documents Lite-On and Sony sharing price information.

ODDCIV-005068998: email dated 9/9/02, documents direct communication and information sharing between Sony and Lite-On.

PNA-CIV0000306941: internal Panasonic email dated 4/22/2003: "Mr. Oikawa/GM from TEAC gave us many call [sic] to exchange price info with us."

PNA-CIV0000250251: Panasonic spreadsheet dated 4/16/2003 titled "competitor info summary" lists competitor pricing for HLDS, Samsung, QSI, TEAC Panasonic, HLDS, Lite-On, Phillips (BenQ).

PNA-CIV0000250247: email dated 4/24/2003, documents Panasonic had knowledge of what competitors TEAC and Toshiba were planning to bid prior to a Dell e-auction in April of 2003.

PNA-CIV0000321115: email dated 4/24/2003, documents direct communication and information sharing among Defendants regarding e-auction pricing and TAM.

PNA-CIV0000306936: email dated 4/29/03, documents direct communication and information exchange between Panasonic, TEAC and HLDS regarding auction results, pricing, rank and competitive information.

ODD-CIV-1019617: PLDS email dated 7/23/2003, documents direct communication between Philips (BenQ) and competitors HLDS, Samsung, and Sony and exchange of information about how to conceal actual component costs and profit from OEMs.

ODD-CIV-003329742: email dated 9/18/2003, documents direct communication and information sharing between Lite-On and QSI regarding Gateway pricing, QSI NB volume, Acer demand, and rebate information.

HLDS_CIV00037469-70: email dated 11/27/03, documents an information sharing dinner between Pioneer and HLDS.

artificially inflated prices without direct communication, through implicit understandings about price setting and trust in the behavior of other colluders, though this would be more difficult to maintain indefinitely without direct communication.¹⁰⁷

142. For both reasons, it is possible that some price elevation relative to a competitive benchmark might have persisted after direct communication among cartel participants largely ended after the police raids in June 2009. In order to control for this possibility, I have allowed for two six month transitional periods at the end of 2009 and beginning of 2010. Prices observed after June 2010 serve as the non-collusive benchmark against which prices during the conspiracy are measured.¹⁰⁸

143. My overcharge model allows for a disaggregated analysis, with estimated impacts permitted to vary within the class, and over the class period, in order to test for class-wide impact over purchasers and time periods in a flexible way. The model includes an annual “dummy” indicator variable for each combination of ODD type (that is, DVD-RW, DVD-ROM, or Combo drive) and customer type (Dell/HP or other) to measure the baseline annual impact of collusion on price. In addition, I included “traffic” variables, measuring the type and intensity of defendants’ direct communications with one another, as a determinant of the collusive impact (since, based on economic theory, empirical economic studies, and empirical economic experiments, direct communications among participants have been established to affect collusive impact).¹⁰⁹ The net result was an estimated impact on price, and estimated overcharge rate, that varied with ODD type, customer type, year, and monthly intensity of various categories of direct communications among participants.

144. This same type of method has been employed in previous studies of the effects of conspiracies, in order to estimate the magnitude of impacts which varied over distinct time periods. The FTC used such a methodology in its published study of the impacts of the electrical equipment cartel in the 1950s.¹¹⁰ This example is particularly interesting because it used

¹⁰⁷ “Finally, [cartel members] develop an elaborate internal hierarchy that allows communication on various levels (executive and middle-management) not only to provide flexibility in the details of the agreement, but to build trust as well...Firms’ expectations about their competitors’ propensity to cooperate can have a significant impact on the success of collusion. These expectations may be influenced by previous interaction, interaction in other markets, and cultural similarities or differences. Trust is also important to coordinating on a collusive equilibrium rather than spiraling down into competition. For example, Debora L. Spar (1994) examines how the internal organization of competitors can affect their capacity for external cooperation. She argues that commitment and credibility are the critical determinants of cartel duration. Her study of the diamond industry describes how cooperation among individualist diamond miners in solving a variety of problems (such as the resolution of property rights and production problems) created the context for cooperation in pricing and distribution. Studies of the rayon industry note that a “culture of collusion” among firms in the industry facilitated cooperation (Craig A. Gallet and John R. Schroeter 1995, Jesse W. Markham 1952). Similarly, the 1930s steel industry benefited from the experience of the Gary dinners of the 1890s (Baker 1989).” Margaret C. Levenstein & Valerie Y. Suslow. *What Determines Cartel Success?*, 44 J. Econ. Lit. 67-69 (2006).

¹⁰⁸ Sales of COMBO drives are sparse after March 2010, so I use all prices observed after the end of 2009 as the non-collusive benchmark for COMBO drives. To the extent that COMBO drive prices remained elevated during the first half of 2010, my estimates based on this benchmark are conservative.

¹⁰⁹ Flamm I, ¶¶ 91-105. My traffic variables are monthly counts of the number of bilateral direct contacts between Defendants of three different types: explicit agreements, implicit agreements, and unknown. The effect of such traffic from up to three months prior is allowed to affect prices in my model.

¹¹⁰ David Lean, Jonathan Ogur & Robert Rogers, *Competition and Collusion in Electrical Equipment Markets: An Economic Assessment*, Bureau of Economics Staff Report to the Federal Trade Commission (Washington:

information on participant meetings gleaned from indictments and Congressional hearings as the basis for the periodization of cartel impacts that was tested and estimated in its econometric model using binary indicator (dummy) variables. Another example of a published econometric cartel study where the effects of a cartel on product prices varied over time, and is measured at different points in time, is the analysis of the impact of the vitamins cartel on vitamin prices undertaken by Kovacic, *et. al.*, who estimated distinct collusion effects on price during different time periods. This study also made use of indicator (dummy) variables to measure differences in the cartel's impact arising from differing numbers of collusive firms.¹¹¹ Yet other examples of published econometric studies of the effect of collusion on pricing, where measured impacts varied over time, were that of Porter (1983) and Ellison (1994), who studied the impacts of collusion on railroad freight rates in the United States in the 19th century.¹¹² Both Porter and Ellison employ dummy variables to characterize different periods over time when changes in cartel structure would be expected to alter the effect of the cartel on prices.

D. The Model Controls for All Other Factors Which Might Explain Changes in Price During the Class Period

145. The model also includes numerous variables that control for economic factors that might explain changes in price during the class period (such as factors that shift demand, and declining costs), including controls for:

- the incremental cost for each type of ODD;
- the number of sellers for each type of ODD;
- the number of units sold of desktop and laptop personal computers;
- the average transaction size for each type of ODD;
- Other microeconomic market variables with impacts specific to each drive type, such as a flash memory price index, the U.S. Producer Price Indexes for all computer products, portable computers, and non-portable computers; the U.S. Consumer Price Indexes for software, internet services, and personal computers;
- Thirty-seven “macro-economic” variables common to all products to control for general economic conditions, including industrial production for eight countries,

Federal Trade Commission, July 1982). A shortened version of portions of this study was published as David Lean, Jonathan Ogur & Robert Rogers, “*Does Collusion Pay....Does Antitrust Work?*,” Southern Economic Journal, Vol. 51 (1985).

¹¹¹ William Kovacic, Robert Marshall, Leslie Marx & Matthew Raiff, *Lessons for Competition Policy from the Vitamins Cartel*, in Vivek Ghosal and Johan Stennek, Ed., *The Political Economy of Antitrust* (Elsevier: Amsterdam, 2007). Their econometric study compares prices during the collusion with prices at various times after the conspirators ended their explicit collusion, using the numbers of firms in the collusion to define dummy variables measuring price-elevating effects.

¹¹² Robert H. Porter, *A Study of Cartel Stability: The Joint Executive Committee, 1880-1886*, The Bell Journal of Economics 301-314 (1983); Glenn Ellison, *Theories Of Cartel Stability And The Joint Executive Committee*, The RAND Journal of Economics 37-57 (1994).

unemployment rates for six countries, exchange rates for seven countries (counting the Euro currency area as one country for the purposes of this analysis), consumer price indices for eight countries, and producer price indices for eight countries

- “Traffic variables” derived from records of direct communications between defendants. Records of communications potentially related to collusive behavior, produced in discovery, were divided into 3 categories (explicit, implicit, unknown). For each category, the total traffic count for any month was equal to the direct communication links between defendants for each distinct collusive incident, summed over all collusive incidents for the month.¹¹³

146. Moreover, the effect of cost is allowed to vary with the number of sellers of that type of ODD,¹¹⁴ as well as with the defendant who produced the ODD, primarily for reasons to do with the cost data discussed in the following section. In addition, costs from up to three months prior are allowed to affect the price in a given month to allow for possible lags in the effects of cost changes.

147. To control for unmeasured model-specific characteristics that might be correlated with the other explanatory variables, I used a so-called “fixed effects” statistical model. Moreover, each ODD model number not only has its own fixed effect but is also allowed to have its own time trend, which can also vary across region and customer type, over and above the other control variables in my model. This allows the prices of different types of ODDs to decrease at different rates, and is motivated as a proxy for model-specific cost trends not captured in the imperfect measures of ODD production cost that were available.¹¹⁵ In effect, every drive model’s price has its own specific starting level and time trend, to which are added the overall price movements caused by the time-varying variables whose effects are being measured.

148. The underlying model I am estimating is:

¹¹³ Using the language of graph and network analysis, the traffic count for each collusive incident was the sum of the links (edges) in a directed graph of communications links between participants (vertices) for each incident. The traffic count for each category of incident counts all bilateral links (edges) in graphs of all incidents for that category, in that month. This measure is a proxy for the value of direct communications networks created by the Defendants during these incidents, and can be motivated by the argument that the value of a communications network is proportional to the number of links between participants. See for example, Rahul Tongia, *The Flip Side of Metcalfe’s Law: Multiple and Growing Costs of Network Exclusion*, 5 Int’l J. Comm. 665-81 (2011). A primary initial source of the traffic variables were the phone bills records which were supplemented with emails, calendars, expense reports and other like documents produced by defendants and identified as reflecting contact among competitors, including those used during deposition examinations of defendant witnesses. Contacts between competitors that appear to relate exclusively to a contractual relationship between them (e.g., a manufacturing relationship) are not included.

¹¹⁴ As I explained in Flamm I, ¶¶191-194, economic theory suggests that the relationship between price and cost will depend on the number of firms competing in a given market.

¹¹⁵ This is known in the econometrics literature as a “random trend” model. A discussion of the procedure I am using may be found in J. M. Wooldridge, *Econometrics of Cross Section and Panel Data* 375-77 (2d ed. Cambridge: MIT Press 2010).

$$\ln(P_{it}) = \sum_{j=1}^6 \sum_y a_{jy} D_{yt} + \sum_{k=1}^3 \sum_{l=0}^3 b_{kl} \text{Traffic}_{k,t-l} + X_{it}\beta + c_{0i} + c_{1i}t + \varepsilon_{it} \#(1)$$

149. Here, i indexes a specific ODD model sold by a particular producer to a particular customer type (Dell, HP, or Other) in a particular region of the world, t is time period, j indexes across the six total combinations of ODD type and customer group, D_{yt} is a dummy variable for year y , k indexes over the three categories of direct communication (“traffic”) links between defendants, l indexes time lags relative to the current period, and X_{it} represents all other control variables described above.

150. After taking first differences (over time), we have the following:

$$\Delta \ln(P_{it}) = \sum_{j=1}^6 \sum_y a_{jy} \Delta D_{yt} + \sum_{k=1}^3 \sum_{l=0}^3 b_{kl} \Delta \text{Traffic}_{k,t-l} + \Delta X_{it}\beta + c_{1i} + \Delta \varepsilon_{it} \#(2)$$

where the prefix Δ denotes the first difference of a variable x (i.e., $\Delta x = x_t - x_{t-1}$). Note that c_{0i} drops out of the differenced equation and c_{1i} , the ODD-model-specific time trend effect, becomes a model-specific constant term. The time trend now plays the role of a model-specific “fixed effect” with our differenced data, and we can estimate (2) using the so-called fixed effects estimator.

151. The results show that statistically significant overcharges are generally found for both Dell and HP, and “other customer” groups.¹¹⁶ Again, these overcharge rates vary by month, drive type, and buyer group, and allow for pricing differences across ODD producer, buyer, ODD model, and geographic region. **Table 8** shows how the average annual overcharges (the averages across monthly overcharges during each year, weighted by monthly sales for that drive type and customer group) vary by drive type, customer group, and year:

¹¹⁶ The model and results are very similar to the illustrative model I presented in Flamm III and further analyzed in Flamm IV, but there have been a number of updates. In calculating the results of my previous model, I inadvertently left out a number of interaction terms allowing cost to affect price differently for PLDS and Toshiba than for other Defendants, so I have corrected those omissions. I also previously dropped relatively large numbers of observations based on quantity sold and price-cost ratio, which I now include in the interest of creating a larger sample, including greater variation in explanatory covariates, and thus enabling more precise coefficient estimates. My controls for the transition to competitive benchmark prices with dummy variables for the second half of 2009 and the first half of 2010 were also added.

With regard to the data, I have added LG data, fixed a bug in the calculation of lagged cost variables that was needlessly excluding observations from the regression, and made a few other specific corrections to the processing of the cost data for various companies which also affect the observation count. The “traffic” variables measuring the intensity of Defendants’ direct communications have also been updated.

Table 8: Average Annual Overcharge for Dell-HP and Other Customers by ODD Type

	Dell/HP				Other			
	Standard		Likelihood		Standard		Likelihood	
DVDRW	Estimate	Error	p-value	Characterization*	Estimate	Error	p-value	Characterization*
2003	0.318	0.080	0.000	Exceptionally Unlikely†	0.342	0.087	0.000	Exceptionally Unlikely
2004	0.287	0.069	0.000	Exceptionally Unlikely	0.295	0.071	0.000	Exceptionally Unlikely
2005	0.268	0.060	0.000	Exceptionally Unlikely	0.282	0.060	0.000	Exceptionally Unlikely
2006	0.214	0.054	0.000	Exceptionally Unlikely	0.244	0.056	0.000	Exceptionally Unlikely
2007	0.143	0.054	0.004	Exceptionally Unlikely	0.203	0.055	0.000	Exceptionally Unlikely
2008	0.105	0.048	0.014	Extremely Unlikely	0.143	0.053	0.003	Exceptionally Unlikely
DVDROM	Dell/HP				Other			
	Standard		Likelihood		Standard		Likelihood	
	Estimate	Error	p-value	Characterization*	Estimate	Error	p-value	Characterization*
2003	0.214	0.084	0.005	Exceptionally Unlikely	0.342	0.080	0.000	Exceptionally Unlikely
2004	0.182	0.077	0.009	Exceptionally Unlikely	0.309	0.078	0.000	Exceptionally Unlikely
2005	0.159	0.068	0.010	Exceptionally Unlikely	0.283	0.073	0.000	Exceptionally Unlikely
2006	0.115	0.063	0.035	Extremely Unlikely	0.251	0.070	0.000	Exceptionally Unlikely
2007	0.047	0.064	0.231	Unlikely	0.198	0.071	0.003	Exceptionally Unlikely
2008	0.038	0.055	0.244	Unlikely	0.174	0.065	0.004	Exceptionally Unlikely
Combo	Dell/HP				Other			
	Standard		Likelihood		Standard		Likelihood	
	Estimate	Error	p-value	Characterization*	Estimate	Error	p-value	Characterization*
2003	0.215	0.076	0.002	Exceptionally Unlikely	0.336	0.072	0.000	Exceptionally Unlikely
2004	0.206	0.072	0.002	Exceptionally Unlikely	0.327	0.068	0.000	Exceptionally Unlikely
2005	0.172	0.065	0.004	Exceptionally Unlikely	0.282	0.063	0.000	Exceptionally Unlikely
2006	0.157	0.059	0.004	Exceptionally Unlikely	0.267	0.057	0.000	Exceptionally Unlikely
2007	0.092	0.059	0.058	Very Unlikely	0.220	0.061	0.000	Exceptionally Unlikely
2008	0.047	0.052	0.184	Unlikely	0.173	0.044	0.000	Exceptionally Unlikely

Note: N=18,541. P-values are one-sided.

† Fewer than 10 identifying observations

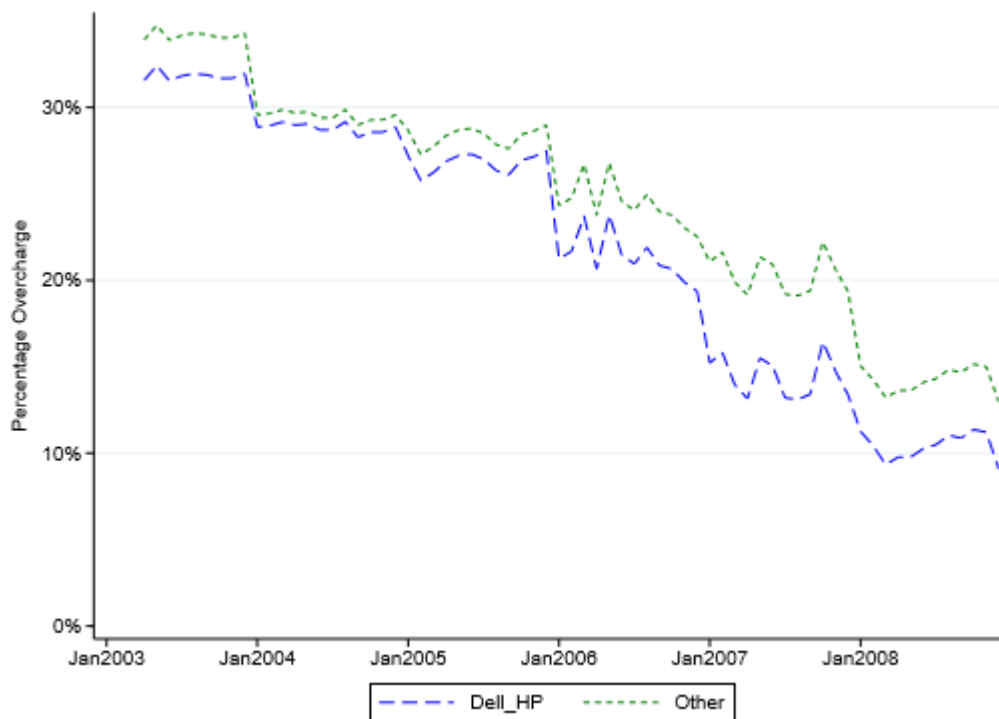
*Likelihood characterization of probability of observing data if no impact assumed, using IPCC categorization:		Number of Annual Estimates	Share of Annual Estimates	Share of Sales During Class Period
0-1% probability:	Exceptionally Unlikely	29	82.9%	87.7%
0-5% probability:	Extremely Unlikely	2	5.7%	7.9%
0-10% probability:	Very Unlikely	1	2.9%	1.5%
0-33% probability:	Unlikely	3	8.6%	2.8%
0-50% probability:	More Unlikely Than Likely	0	0.0%	0.0%
50-100% probability:	More Likely Than Unlikely	0	0.0%	0.0%
66-100% probability:	Likely	0	0.0%	0.0%
90-100% probability:	Very Likely	0	0.0%	0.0%

152. These results indicate, with very strong statistical significance, that between 2003 and 2008, purchasers of ODDs were affected by inflated prices, with high overcharges. **Table 9** summarizes the proportion of years and total sales for which a statistically significant overcharge is found using significance levels of 5% and 10%:

Table 9: Summary of Average Annual Overcharge Regression Estimates

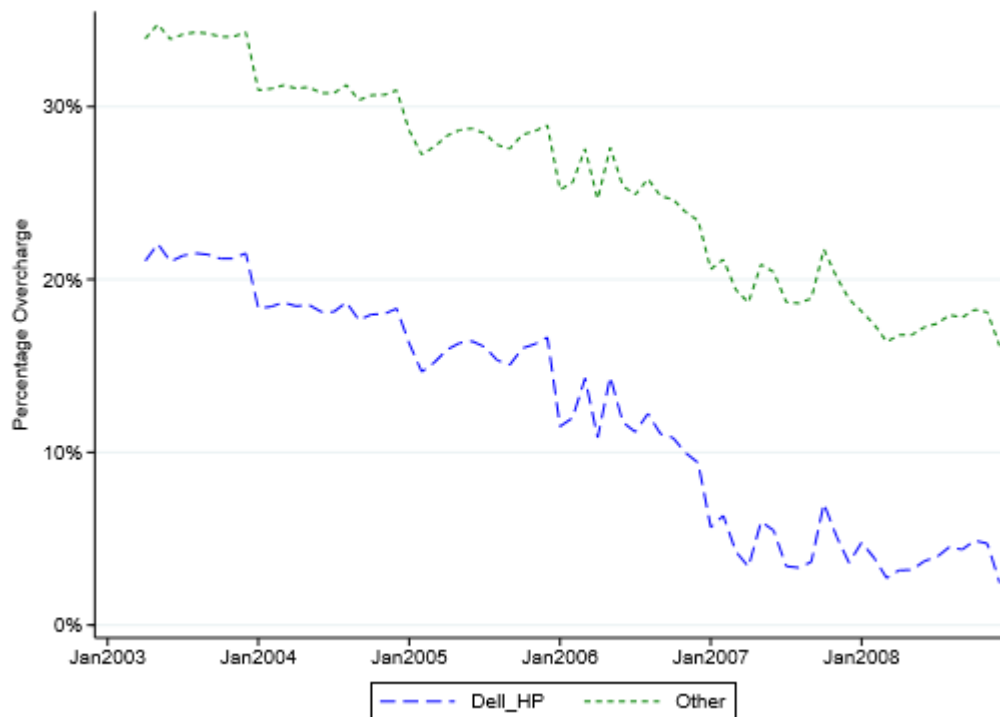
	Number of Avg. Annual Estimates	Statistically Significant Positive Overcharge Estimates		Share of Sales During Class Period Impacted	
		5% One-Sided	10% One-Sided	5% One-Sided	10% One-Sided
Dell/HP	18	77.8%	83.3%	89.3%	93.1%
Other	18	100.0%	100.0%	100.0%	100.0%
All	36	88.9%	91.7%	95.7%	97.2%

153. **Figure 11** is a graphical depiction of the monthly variation in overcharge rates on DVD-RWs by customer group, drive type and month, incorporating the effects of “traffic” variables, measuring the type and intensity of defendants’ direct communications with one another, estimated by my model:

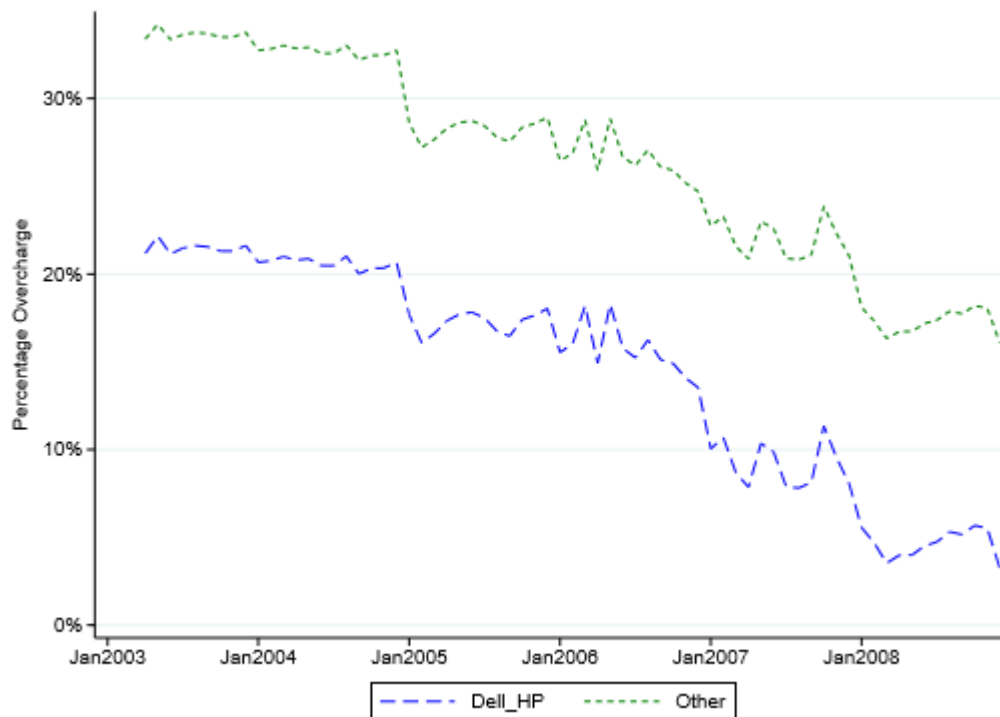
Figure 11: Overcharge on DVD-RWs by Month and Customer Type

154. This figure shows the time pattern of the overcharges imposed on DVD-RW customers. The overcharges on Dell and HP were substantial, though less than those imposed on other customers.

155. I produce a similar graphical depiction demonstrating the overcharge for DVD-ROM drives in **Figure 12**:

Figure 12: Overcharge on DVD-ROMs by Month and Customer Type

156. And, again, **Figure 13** depicts the monthly overcharge for Combo drives:

Figure 13: Overcharge for Combo by Month and Customer Type

E. The Multivariate Regression Incorporates Data From Producers Who Collectively Accounted for Over 86 Percent of the ODD Market

157. This model is estimated using transactional sales and cost data for drives sold by BenQ, NEC, Panasonic, Pioneer, Samsung, Toshiba, and TSST, in addition to the data from Philips/Lite-On/PLDS, HLDS, and Quanta used in my earlier reports. The overcharge analysis now utilizes 2.59 million transactions and covers firms accounting for 86 percent of sales in the ODD market.¹¹⁷

158. Only two defendants' data—Sony and Teac—have not been utilized in the overcharge model. This is because Sony and TEAC have not provided data for monthly costs of manufacturing for each model in their sales data production. Should Sony and TEAC provide usable data in the future, this model could be augmented with their data as well.

159. Because the defendant companies provided their ODD cost data in widely varying and sometimes inconsistent formats, substantial work went into creating manufacturing cost measures that were comparable across defendant ODD producers. Even after all this effort, the resulting cost measures are probably best interpreted as “proxy” variables for a true, unobserved incremental cost of producing an additional ODD at any defendant company. As is well

¹¹⁷ See Techno Systems Research Co., Ltd: 2006 Optical Disc Market Analysis; Techno Systems Research Co., Ltd: 2007 Optical Disc Market Analysis; and Techno Systems Research Co., Ltd: 2008 Optical Disc Market Analysis.

understood in econometrics, “[l]oosely speaking, a proxy variable is something that is related to the unobserved variable that we would like to control for in our analysis.”¹¹⁸ Since the accounting cost systems and concepts found in defendant-produced data vary widely across defendants, there is good reason to believe that the relationship between our proxy cost variable and the unobserved incremental cost of manufacturing an ODD also varies across defendants. Consequently, the coefficients of all variables containing defendant manufacturing cost, or other variables that interact with defendant manufacturing cost, will vary by producer in my regression model, and a model-customer-region time trend (the fixed effect in equation 2) is included.¹¹⁹

F. A One-Tailed Test of Statistical Significance Is Appropriate Where There Is a Directional Alternative Hypothesis (that the Conspiracy Had a Positive Effect)

160. Science is about probabilities, not certainties, and a hypothesis test is formally posed as a question about whether a null hypothesis (H_0) about some population parameter can be rejected based on observed data. Conceptually, there are two kinds of errors that can be made: a Type I error is committed if one rejects the null hypothesis when it is in fact true. A Type II error is made if one does NOT reject the null hypothesis when a different, alternative hypothesis (H_1) is actually true. Hypothesis tests are constructed by fixing the Type I error, under the assumption that the null hypothesis is true, then rejecting the null hypothesis when a test statistic based on the sample data exceeds a threshold based on some fixed probability of Type I error assuming the null hypothesis is true.¹²⁰ That is, one rejects the null hypothesis if the test statistic exceeds a threshold based on the largest value in the test statistic one would expect to observe in some fixed percent of randomly drawn samples if the null hypothesis were true. When the test statistic is in this “rejection region,” the null hypothesis is rejected.

161. The percent of random samples from the population in which that threshold would be exceeded, and the null hypothesis therefore falsely rejected in repeated sampling, ***if the null hypothesis were actually true***, is known as the *significance level* for the test. It corresponds to the probability of a Type I error (incorrect rejection of the null hypothesis) were the null hypothesis actually true.

¹¹⁸ J. M. Wooldridge, *Introductory Econometrics: A Modern Approach* 309 (5th ed. Mason, OH: South-Western Cengage 2013). Wooldridge then goes on to give an example of a proxy variable: “In the wage equation, one possibility is to use the intelligence quotient, or IQ, as a proxy for ability. This does not require IQ to be the same thing as ability; what we need is for IQ to be correlated with ability, something we clarify in the following discussion.”

¹¹⁹ In technical terms, we are assuming that for every defendant d , defendant d ’s unobserved cost C_d is related to my cost proxy variable X_d by a linear relationship $C_d = a_d + b_d X_d + u$, where a_d and b_d are defendant-specific coefficients related to the details of their cost accounting systems, and u is a random statistical discrepancy or disturbance term. As a consequence, the coefficient of variables containing cost or interacting with cost in the regression model will vary by producer, and the estimated coefficients of these variables will incorporate the coefficient b_d of the proxy variable relationship. (Producer-specific intercept term a_d is incorporated into the fixed effect, which is not actually estimated in my fixed effects model.) However, these are not the coefficients of primary interest in our model, and use of a proxy variable to control for cost allows us to correctly estimate the overcharge, the effect of the alleged collusion on price. *See* Wooldridge, *op. cit.*, p. 310.

¹²⁰ Generally, calculation of a Type II error will require knowledge of a specific numerical value for a parameter under the alternative hypothesis. Unlike a Type II error, calculation of a Type I error will only require knowledge of the direction relative to the null hypothesis for the alternative hypothesis (bigger, smaller, bigger or smaller) but not a specific numerical alternative.

162. Construction of the rejection region for a hypothesis test, in addition to being based on a null hypothesis, requires knowledge of a reasonable alternative hypothesis against which the null is being tested. As one statistics textbook notes:

Finally, hypotheses can also be directional or non-directional. A directional hypothesis states that an effect will occur, but it also states the direction of the effect. For example, 'readers will know more about research methods after reading this chapter' is a one-tailed hypothesis because it states the direction of the effect (readers will know more). A non-directional hypothesis states that an effect will occur, but it doesn't state the direction of the effect. For example, 'readers' knowledge of research methods will change after they have read this chapter' does not tell us whether their knowledge will improve or get worse.¹²¹

163. This textbook also notes:

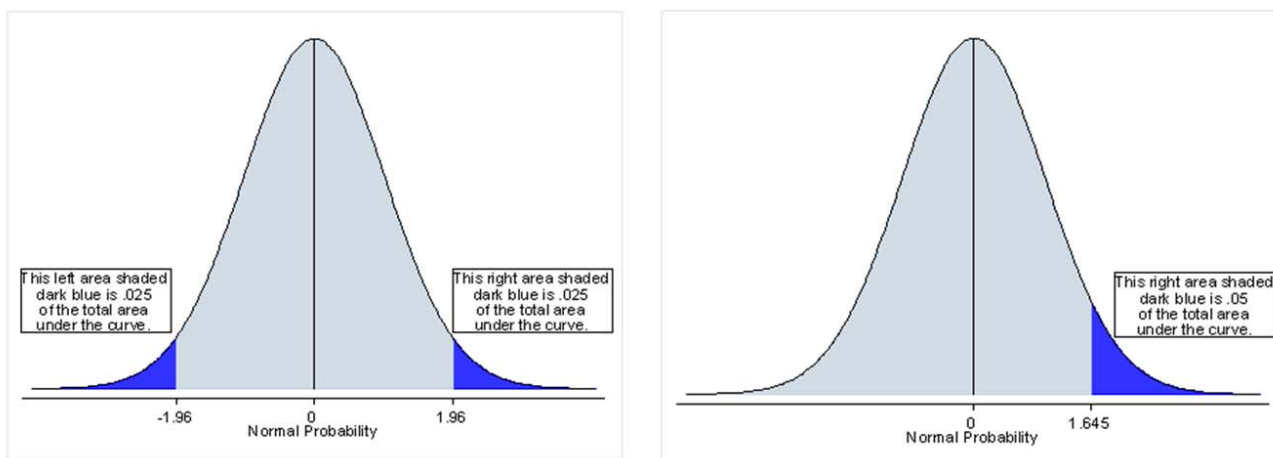
A statistical model that tests a directional hypothesis is called a one-tailed test, whereas one testing a non-directional hypothesis is known as a two-tailed test.¹²²

164. Thus, if the alternative hypothesis implies that the test statistic will only take on larger values than it would, under the null, or only smaller values than it would under the null, that is known as a one-tailed alternative. The top half of **Figure 14** shows the distribution of a test statistic that is normally distributed under the null hypothesis of a zero population mean and a variance equal to one. If we are testing against the non-directional alternative hypothesis that the mean is not zero, that implies that, on average, the test statistic will take on a value different than under the null, *i.e.*, has a mean that is greater or less than zero. If we fix a 5% significance level for this test, we would reject the null hypothesis whenever the test statistic is greater than 1.96, or less than -1.96, since a variable drawn from a standard normal distribution will fall outside the interval between those two values, *i.e.*, in the blue area (known as the *rejection region*), only 5% of the time if the null hypothesis is correct.

165. If instead we have a one-sided alternative hypothesis (for example, if theory tells us the true value of the parameter in the population cannot be negative), we would reject the null hypothesis whenever the test statistic was greater than 1.65. This different rejection region is represented by the blue area in the bottom half of **Figure 14**. In other words, with the directional alternative hypothesis, if the null is correct, then we would be wrong only 5% of the time if we rejected the null whenever we drew a random sample that produced a test statistic exceeding this value.

¹²¹ A. Field, *Discovering Statistics Using SPSS 27* (3d ed. London: Sage Publications 2009).

¹²² *Id.* at 54.

Figure 14: Illustration of Two- and One-sided Significance Tests at 0.05 Significance Levels

166. This makes intuitive sense, because the larger the value of the test statistic, the less likely it is for the null hypothesis to have been true. In fact, given any test statistic, we can calculate what the largest probability of a Type I error (the significance level) would have had to have been set to in order to not reject the null. This is known as the p-value. The smaller the p-value, the smaller the probability of a Type I error, and the lower the risk of incorrectly rejecting the null. Thus, p-values measure the likelihood of incorrectly rejecting the null hypothesis, given the observed data. The smaller the p-value, the smaller the probability of incorrectly rejecting the null were you to reject based on the test statistic produced by the actual data.

167. Small p-values mean there is only a small probability that you would have drawn the sample, and a test-statistic at least as large as that produced, if the null hypothesis were true. A small p-value is therefore strong evidence against the null.

168. If economic theory tells us that the correct alternative hypothesis is directional, as it does in this case, then the one-tailed test is a more powerful test, that is, the probability of a Type II error (false non-rejection—acceptance—of the null hypothesis when the alternative is actually true) will be smaller, and the one-tailed test is simply a better, more powerful test. For given probability of Type I error (significance level), Type II error probabilities will always be smaller for the directional alternative hypothesis.

169. Confidence intervals have a natural connection to two-tailed hypothesis tests (if the null hypothesis is that a parameter is zero, *e.g.*, the overcharge equals zero, then rejection of a two-tailed statistical test at the 5% level is equivalent to zero being outside the 95% confidence interval). Thus, because econometrics programs routinely spit out confidence intervals, which are two-tailed, they also routinely spit out p-values for two-tailed tests.

170. When a researcher has a directional alternative hypothesis about a parameter (as in this case), statistics textbooks suggest that a one-tailed hypothesis test is appropriate.¹²³ When

¹²³ “This paper demonstrates that there is currently a widespread misuse of two-tailed testing for directional research hypotheses tests... Standard textbooks on statistics clearly state that non-directional research hypotheses should be tested using two-tailed testing while one-tailed testing is appropriate for testing directional research

a one-tailed alternative and significance test is the theoretically appropriate one, as it is in this case, the two-tailed test is inferior, and biased in favor of not rejecting the null hypothesis of no impact. Calculating a one-tailed test for a positive impact against the “no impact” null hypothesis requires slightly greater programming effort, since it is not automatically calculated by statistical software, but is the correct. The rejection region for a one-tailed test at 5% (against a positive alternative) is the same as the positive rejection region for a two-tailed test at 10%.

171. For purposes of calculating the total damages (discussed in further detail in section VIII), I have conservatively calculated damages for drive types, customer categories, and time periods when the estimated overcharge passes a one-tailed test at the 10% level. Though prices may have also been inflated for the remaining drive-customer-month combinations, my damages calculation conservatively assigns zero impact in those cases.¹²⁴

V. PASS-THROUGH OF OVERCHARGES TO THE INDIRECT PURCHASER CLASS

172. In four previous reports, I have presented 183 pages of pass-through analysis, demonstrating a common method for measuring damages to IPPs due to defendants’ price fixing conspiracy.¹²⁵ In this section, I consolidate and summarize my analysis of pass-through. I also update my results using additional data that had not been produced until recently.

173. In the following sections, I present a variety of analyses examining the issue of pass-through of cost into price. My empirical examination of pass-through is based on an immense amount of commerce for ODD products, which I use to separately analyze: 1.) the pass-through of costs “baked-in” to initial computer prices—including for pre-configured computers sold at particular price points; 2.) the pass-through of ongoing cost changes after the launch of these computers; and 3.) the pass-through of initial and ongoing costs into configure to order (CTO) computers. These analyses strongly support the conclusion that elevation in the cost of ODDs would have led to a market-wide increase in the quality-adjusted price of ODD products and overwhelmingly support common, class-wide damage.

174. In this section, I provide the following analyses:

- a. An overview of pass-through methods and evidence;
- b. An examination of price-setting in the computer industry;
- c. A detailed discussion of the pass-through methodology used in my analysis; and
- d. A summary of the results of my pass-through and supporting analyses.

hypotheses (e.g., Churchill & Iacobucci, 660 (2002); Pfaffenberger & Patterson, 403-569 (1987). However, during the actual conduct of statistical testing, this advice is not often heeded.” H.C. Cho & S. Abe, *Is Two-Tailed Testing For Directional Research Hypotheses Tests Legitimate?*, Journal of Business Research, vol. 66 (2013), p. 1261.

¹²⁴ I also assign zero impact for Dell/HP DVD-RW drives in 2003 due to insufficient identifying observations containing information useful for estimating that specific overcharge. See Flamm II, ¶¶102-103 for an explanation of identifying observations in the context of my model estimated in first differences.

¹²⁵ Flamm I, pp. 45-53, 57-59, 86-98; Flamm II, pp. 51-89; Flamm III, pp. 30-87; Flamm IV, pp. 118-184.

A. Overview of Pass-Through Theory and Evidence

1. Documentary Evidence of Impact on Indirect Purchasers

175. Consistent with empirical studies finding that price changes in an input would lead to price changes in the price of a final product, documentary evidence in this case implies that increased ODD prices would have increased prices of finished products that use ODDs.¹²⁶ The European Commission's published report on their investigation of the Philips/Lite-On ODD merger case also nicely documents the sensitivity of PC makers to their optical disk drive prices, expressed through their willingness to bargain hard for price reductions while procuring ODDs: "Suppliers of PC ODDs have to work against the price target set by PC manufacturers who are in fierce competition amongst themselves."¹²⁷

176. The defendants also understood that there was a connection between ODD prices and the changes in prices of finished products.¹²⁸ There are several examples I have reviewed in defendants' documents where this relationship is tracked or analyzed.¹²⁹

¹²⁶ See also **ODDCIV- 000150650**: Becky Lin of HP complains to PLDS' team, including JC Lim and Charlie Tseng, that their quote during an DVD-ROM eRFQ is the same as last quarter. Lim states,

"Cost reduction is the main focus for HP as you should be aware of (also the message received during HPSS meeting). So this is critical period that P needs Supplier to support on providing more aggressive & competitive pricing to support the business growing."

However, PLDS and TSST have reached an agreement in this procurement event to drop only two cents in the next round, so Lin's plea goes unheeded.

See also **HLDS_CIV1893553**: HLDS's Hiraoka Yasuki has dinner with Hiraoka's pre-existing Panasonic's (MEI) contact (not named). The MEI contact adds a third to their group – someone from TSST. The dinner goes forward, and later Hiraoka meets with someone from Pioneer. As for information that Hiraoka is instructed to give to Panasonic regarding pricing, he is to encourage Panasonic not to believe Apple's claim that HLDS's pricing is lower – it is not, per information gathered from Asus, an Apple ODM. In the bottom email Jim Lee writes: "Regarding price, as we discussed last time, we're getting a lot of challenges from Apple every month due to our price higher than MKE [a Panasonic division] and its turns out to be correct based on information from OEM. However, we're not going to lower down price any more in Dec from previous Dec quotation, \$76.00. We have no reason since Apple is facing shortage and begging us for even additional 1 k. Per information from Asus at the end of Oct, MKE's Dec, price was \$75.90. Therefore, please push MKE not to follow Apple's threat that "HLDS price is much less".

¹²⁷ European Commission, Case No COMP/M.4502 -LITE-ON / PBDS, Feb. 16, 2007, p. 9.

¹²⁸ See **ODDCIV-001027892**: HP has been monitoring the retail price of a drive, here on TigerDirect.com. HP learns on the website that BenQ is offering a drive for less than is being offered to HP. HP either wants the lower price, or to have Philips reign in BenQ from offering the low price to TigerDirect, which it must have, since the price offered is so low. Emmanuel Erba of HP writes to Rudy Philips of Philips, "We need either drive prices from Philips that enable to reach those street prices (i.e., a \$50 drive) and/or more control from Philips over these practices (4th time we have an escalation about this)." Philips responds that TigerDirect has decided to reduce their own margins in order to move the product, and that Philips and BenQ cannot control that. Erba responds with suggestions to keep the prices up for everyone. He also provides an illustration of pass-through as he writes, "I hope the Philips community understands the consternation of HP to see our best partner branded products creating further price erosion in the street and price protection for HP who needs to pay significant amount to its channel partners in order to move the same Philips 4X drives under HP brand at a price closer to the Benq drive @ \$89. The ratio of volumes in the channel between HP (several 10s of K) and Philips/BenQ (few K each time) makes the pain ratio ~ 10X for HP vs Philips in \$, please make sure that you take this into consideration."

¹²⁹ See **ODDCIV- 0000003377**: In deciding whether PLDS should launch Universal Combo or not, Anthony Liu of PLDS writes to Clara Chen, copying several others. Liu has clearly looked to the prices of the finished

177. The cartel participants clearly viewed their activities as effective. For example, in one document produced by defendant HLDS, an HLDS employee meets with employees of HLDS's competitors, Panasonic and TSST, and separately with HLDS's competitor Pioneer. Based on information provided by the competitors, HLDS was able to determine that it did not need to meet the customer's (in this case Apple's) demand for lower prices. HLDS also communicated the same to Panasonic.¹³⁰

product or other suppliers in the big retail shops in analyzing whether PLDS should launch the new product, explaining,

"Current sales quantity of LG Universal Combo:
Retailers: So far only Fry's is on shelves. The rest is on the dot. com. We will try to get the sale through from Fry's."
NA Disty : To our understanding LG has only 2K per month as Universal Combo allocation. Sales through has been very well. As to the 6X Writer, only a couple of hundred pcs per month. Both are under allocation
Latin: No allocation.
As to going for Universal Combo or not:
Be honest, our customers are really having not much idea as of today even with announcement from Warner Brothers. Customers expect us to tell them what will be the market direction. To us \$45-\$55 cost (BOM \$25 /IP \$20/ \$10 as operation investment as estimated) means MSRP \$70 more than the single format (Blu only), it might be possible that we could stay with single format."

ODDCIV000003087: Po Chen of PLDS sends out the weekly report to the US offices. It is clear the big retailers are constantly monitored for ODD sales. The weekly report contains two entries in the previous week's minute circulated as they prepare for this week's meeting: "Top 3 Hard Drive Retailer: Best Buy, Newegg.com, Fry's" and "Major issues - Fry's July Philips promo; working on october plan, running promo in Best Buy Endcap + Ad."

ODDCIV-000052049: Brett Bernhardt and Peter Bollen of PLDS write a PowerPoint entitled, "Blue Laser Review and Considerations," in which an analysis of the next generation drive, HD and BD, market is given. Pages 5-7 contain retail prices of Blu-Ray players, media, gaming systems and other ODD products which utilize ODDs are listed.

ODDCIV-000187180: Yalin Lai, Sales Support Manager at PLDS, writes to Clara Chen, GM of PLDS. "Please see the report for Charlie [presumably Charlie Tseng], who is the highest on organizational charts at PLDS. The report has a tab "NA Competitors", which lists the bulk and retail prices for LG, Sony and Samsung at such outlets as MaxGP, Malab, Newegg, D&H, and Supercom.

ODDCIV-00005701: Po Chen of PLDS sends out the weekly report to the US offices. The retailers are again being monitored by PLDS, as are their competitors. These meeting minutes dated 5/27/2008 contain an entry stating, "LG 6X BD Writer is MSRP \$399, Universal BD/HD DVD combo L/S \$299.99"

PNA-CIV236029: Steve Ferketich of Panasonic meets with Pac Bell's Chris Yohsida and discuss Pac Bell's relationship with the big box retailers and some of the pricing to them. Specifically, Yoshida informs Ferketich: "Bell noted that Toshiba is at a retail price of \$99.00 with a \$30.00 rebate and Memorex is \$79.00 with a \$20.00 rebate."

ODDCIV-05102125: Gillian Chu of Lite-On sends Charlie Tseng a "Sony price matrix & GP Proposal" on 12/6/2003, during the Sony/Lite-On alliance. The Excel Sheet contains the market price and end-user prices for most of its competitors.

¹³⁰ See **HLDS_CIV1893553**: detailed above in footnote 126.

See also **HLDS CIV0011826** (Korean): In a HLDS memorandum entitled "Post-Mortem on HH DVDRW on e-RFQ": Daniel Hur, HP Account Team Leader, states "The biggest driving force to win this game was the fact that

178. More broadly, as a matter of economic theory, it would be irrational for these firms to have organized a costly and complex series of communications over many years, with a known, significant risk of large fines for their companies and incarceration for company executives, if they did not believe that the collusion had a significant impact on prices and profitability in the marketplace.

179. Indeed, the evidence I review above suggests that this activity extended over at least six full years – from the spring of 2003 through the summer of 2009, a period during which other divisions of many of defendants’ parent corporations were involved in very public, criminal and civil price-fixing lawsuits.¹³¹ That the participants persisted over such a long period in this activity, at a time when publicity about the illegal nature of this activity, and the expensive fines and other penalties that might be incurred as a result, was at a peak, suggest that as an economic matter, taking these risks would make sense only if offset by a significant economic reward. That the activity continued implies that rewards were perceived as large by the colluders.

2. Economic Theory Suggests Impact on Indirect Purchasers

180. In this section, I discuss the economic literature on how cost increases for an input used in the production of a finished good are passed through to final purchasers of the finished good. I conclude that as a general matter, regardless of the mode of competition in the finished good-producing industry (perfect competition, or widely accepted and utilized models of imperfect competition), economic theory predicts increases in the prices of the finished goods. Indirect purchasers would therefore have felt some impact from successful elevation of ODD prices by the alleged collusive activities.

181. There are four distinct strands of economics literature that address the issue of how producer prices behave as input prices change. The public finance literature discusses the effect on the price of a manufacturer’s finished product were a tax or subsidy (lump sum, specific, or proportional, ad valorem) to be imposed on it.¹³² The international trade literature studies how changes in exchange rates and their consequent effects on imported input costs would affect domestic prices.¹³³ The applied microeconomics literature examines how input

the two branch offices turned in the detailed background of the conditions for each e-RFO at the beginning and they investigated the status of the competitors such as TSST/PLDS, actions to be taken, the details of the cost advantage and etc; and the Houston office made available away to get a tip from Wes Smith at the 3rd round”.

¹³¹ For example, the following corporate entities related to the ODD defendants were involved in the *CRT* civil antitrust litigation: Hitachi, Ltd., Koninklijke Philips Electronics N.V., LG Electronics, Inc., LG Electronics U.S.A., Inc., Panasonic Corporation, Panasonic Corporation of North America, Samsung Electronics Co., Ltd., and Toshiba Corporation. The following corporate entities related to the ODD defendants were involved in the *LCD* civil antitrust litigation: Hitachi, Ltd., Samsung Electronics Co., Ltd., and Toshiba Corporation. The following corporate entities related to the ODD defendants were involved in the *SRAM* litigation: Hitachi, Ltd., NEC Corporation, Samsung Electronics Co., Ltd., and Toshiba Corporation.

¹³² See, e.g., C. Hepburn, et. al., “Emissions trading with profit-neutral permit allocation,” *Journal of Public Economics*, vol. 98 (2013), pp. 85-99; J. Poterba, “Retail Price Reactions to Changes in State and Local Sales Taxes,” *National Tax Journal*, vol. 49, no. 2, (1996), pp. 165-176; R. Sullivan and D. Dutkowsky, “The Effect of Cigarette Taxation on Prices: An Empirical Analysis Using Local-Level Data,” *Public Finance Review* vol. 40, no.6 (2012): 687-711.

¹³³ See, e.g., Anne Gron and Deborah L. Swenson, “Incomplete Exchange-Rate Pass-Through and Imperfect Competition: The Effect of Local Production,” *The American Economic Review*, Vol. 86, No. 2, Papers and

prices affect product prices. For example, studies have been done on how changes in the minimum wage have affected restaurant prices, and how agricultural product price changes have affected the prices of processed food products that use these inputs.¹³⁴ Finally, a literature in industrial organization considers explicitly how to measure pass-through of harm to consumers from an upstream cartel's elevation of the price of an input, to downstream consumers of a finished product utilizing the price-fixed input.¹³⁵ In fact, there are even empirical studies of how cartel-organized price increases for an input affected prices for products making use of that input.¹³⁶

182. The conclusion of all the different strands of economics literature is that as a general matter, prices of finished products increase as the result of an increase in an input price. In a perfectly competitive finished product industry, the only two exceptions to this rule would be when an industry faces a perfectly elastic demand for its products (*i.e.*, where demand would immediately drop to zero in the face of any price increase whatsoever), or when supply is perfectly inelastic (*i.e.*, even a very large increase in price is incapable of stimulating additional supply of a product).¹³⁷ Both of these scenarios are considered by economists as non-existent in the real world, though as hypothetical extreme scenarios they may help one to see the logic of the more general cases.¹³⁸

183. Both of these hypothetical scenarios are incompatible with the nature of the industries that use ODDs. Existing empirical studies of the computer industry, for example, have concluded that demand is not perfectly elastic.¹³⁹ Moreover, supply in the computer industry, is

Proceedings of the Hundredth and Eighth Annual Meeting of the American Economic Association San Francisco, CA, January 5-7, 1996. (May, 1996) and Anne Gron; Deborah L. Swenson, "Cost Pass-Through in the U.S. Automobile Market," *The Review of Economics and Statistics*, Vol. 82, No. 2. (May, 2000); Knetter, Michael (1993), "International Comparisons of Pricing-to-Market Behavior," *American Economic Review*, 83(3): 473-86; and Jose Manuel Campa and Linda S. Goldberg, "Exchange Rate Pass-Through Into Import Prices," *Review of Economics & Statistics*, November 2005.

¹³⁴ See *e.g.*, D. Aaronson, "Price pass-through and the minimum wage," *Review of Economics and Statistics* 83.1 (2001): 158-169 and Kim, Donghun, and Ronald W. Cotterill. "Cost Pass Through in Differentiated Product Markets: The Case of US Processed Cheese," *The Journal of Industrial Economics* 56, no. 1 (2008).

¹³⁵ See, *e.g.*, Boone, J. & Muller, W., "The distribution of harm in price-fixing cases," *International Journal of Industrial Organization*, 2012, and references cited therein.

¹³⁶ See *e.g.*, Connor, John, "Forensic Economics: An Introduction with Special Emphasis on Price Fixing," Working Paper, Purdue University, West Lafayette, IN, March 2007, Cotterill, Ronald W. "Estimation of Cost Pass Through to Michigan Consumers in the ADM Price Fixing Case," University of Connecticut, Food Marketing Policy Center, Research Report 25148 (1998), and de Roos, N. (2006). "Examining models of collusion: The market for lysine," *International Journal of Industrial Organization*, 24(6).

¹³⁷ See *e.g.*, Robert G. Harris and Lawrence A. Sullivan, "Passing on the Monopoly Overcharge: A Comprehensive Policy Analysis," *University of Pennsylvania Law Review*, Vol. 128, No. 2. (Dec., 1979).

¹³⁸ See Robert G. Harris; Lawrence A. Sullivan, Passing on the Monopoly Overcharge: A Comprehensive Policy Analysis, *University of Pennsylvania Law Review*, Vol. 128, No. 2. (Dec., 1979) in this point. Cotterill, Ronald W., Leonard Egan, and William Buckhold. "Beyond Illinois Brick: The Law and Economics of Cost Pass Through in the ADM Price Fixing Case," *Review of Industrial Organization*, 18(1):45-52, February 2001, pp. 45-52, implicitly dismiss the issue of a perfectly inelastic supply as implausible, since they do not even mention it.

¹³⁹ See, *e.g.*, Flamm, Kenneth, Targeting the Computer, Brookings, 1987, Terleckyj, Nestor, "Growth of the Telecommunications and Computer Industries," in Crandall and Flamm, Ed., *Changing the Rules*, Brookings, 1989, Brynjolfsson, Erik, "Some Estimates of the Contribution of Information Technology to Consumer Welfare," MIT Sloan School, Cambridge, MA, January 1994, Brynjolfsson, Erik and Lorin Hitt, "Paradox Lost? Firm-level Evidence on the Returns to Information Systems Spending," *Management Science*, Vol. 42, No. 4, April 1996,

not perfectly inelastic. Were prices to soar in this industry, substitute resources for their manufacture would be bid away from other uses.¹⁴⁰ Desktop PC producers could, for example, bid away drives from laptop computer or industrial equipment production by offering higher prices to suppliers. Price increases would generally spread across the computer industry (driven by the demand and supply-side substitution among optical drives just discussed above), but any particular ODD-using product segment could clearly bid away drives from other applications and expand output, albeit while raising prices for ODDs more generally. Supply would clearly never be perfectly inelastic for any particular type of ODD, for use in any particular type of finished good product.

184. With imperfect competition, firms by definition¹⁴¹ face downward-sloping demand curves for their products, ruling out one of the exceptional theoretical circumstances (price-taking, perfectly elastic demand – product demands dropping to zero in response to the tiniest of price increases) that might result in no impact on consumers with perfect competition. Discussions of pass-through with imperfect competition in the literature do not even consider the other theoretical circumstance (resulting in zero pass-through with perfect competition), a perfectly price-inelastic (fixed and completely unresponsive to price) supply of the product to the finished product industry, for a very simple reason – there is no “supply curve” under imperfect competition. Instead, with imperfect competition, firms make profit-maximizing output or pricing decisions, conditional on their expectations about industry demand and production or pricing by other producers.

185. One very general framework that has been widely used in the current economics literature to analyze the effect of changes in upstream industry prices on downstream (upstream products are inputs to the downstream) industry prices makes only minimal assumptions about

Tamim Bayoumi & Markus Haacker, *It's Not What You Make, It's How You Use It: Measuring the Welfare Benefits of the IT Revolution Across Countries*, IMF Working Paper (July 2002), and Jeremy Greenwood & Karen Kopecky, *Measuring the Welfare Gain from Personal Computers*, NBER Working Paper Series, No. 13592 (November 2007).

¹⁴⁰ Use of general purpose contract electronic manufacturing facilities is widespread. Similarly, many of the same components that are used to make computers are used to make video game consoles, telecommunications equipment, and industrial electronics.

¹⁴¹ Since perfect competition means that firms take their output price as fixed, perfectly competitive firms perceive a demand curve that is horizontal, rather than downward sloping.

firms' cost and demand curves.¹⁴² It assumes (again, very generally) only that the downstream industry equilibrium is a Nash equilibrium in the actions of the firms in the industry.¹⁴³

186. Different modes of competition are represented in this model using a parameter θ (whose value measures the effect of a firm's action on total industry output relative to the firm's output.) With perfect or Bertrand (a form of oligopolistic) competition $\theta = 0$. With Cournot (another form of oligopolistic) competition $\theta = 1$. With perfect collusion (maximizing collective joint profits for all firms in the industry), $\theta = N$, where N is the number of firms in the industry. Generally, θ can be thought of as a parameter whose value depicts a spectrum of modes of perfect and imperfect competition studied by economists, bookended by perfect competition at one extreme, and perfect collusion at the other.¹⁴⁴

187. The key point is that in this very general model, which subsumes a large variety of the models commonly used by economists to study imperfect competition, it can be shown that increases in the price of an input always lead to an increase in the price of the product downstream.¹⁴⁵ Thus, in the most general of circumstances, using widely accepted and utilized economic models of imperfect competition, economic theory tells us to expect at least some degree of positive impact on downstream prices (like those for computers) due to elevated prices for an input (like ODDs). The primary question at hand then, is not the qualitative fact of impact, but the quantitative empirical measure of the extent of harm from that impact.

188. Three lessons emerge from the literature on pass-through. First, as a theoretical matter, in a perfectly competitive industry (a very large number of sellers, no one of which has any power to set prices) the incremental change in product price will be less than or equal to 100 percent of an incremental change in product cost, and generally equal to 100 percent if marginal costs are constant (supply is perfectly elastic) or if industry demand is perfectly inelastic (fixed). With a 100 percent rate, prices will rise or fall by exactly the amount of the input cost increase (or decrease). Since empirical research suggests that most industries have long-run supply

¹⁴² The assumptions it does make are that incremental cost for an additional unit of output is greater than zero, and that this incremental cost is non-decreasing as total production increases. Also, total production cost for any fixed level of output is assumed to not decline as the input price is raised. Finally, incremental cost is assumed to not decline as any input price is raised, ceteris paribus, and at least one firm's incremental cost must increase with an increase in the price of the input in question. These would generally be considered non-controversial and widely accepted assumptions. The firms in this model are not assumed to be identical in size or production cost structure.

On the demand side, it is assumed only that demand curves are downward-sloping (quantity demanded by consumers increases at least a tiny bit if price is lowered sufficiently) and that the profit maximization problem of firms is well-defined.

See J. Boone and W. Muller, "The distribution of harm in price-fixing cases," *International Journal of Industrial Organization*, vol. 30 (2012), p. 267. Essentially the same model is used in C. Hepburn, et. al., "Emissions trading with profit-neutral permit allocation," *Journal of Public Economics*, vol. 98 (2013), pp. 85-99.

¹⁴³ "Nash Equilibrium" is a very general game theory equilibrium concept that is widely accepted and used in economics. Its inventor, John Nash, received the Nobel prize in Economics for this contribution, and inspired the film "A Beautiful Mind".

¹⁴⁴ The assumptions in this basic model as set out above assume homogeneous products being sold within the industry; Boone and Muller (2012) also show how similar results can be obtained with differentiated products.

¹⁴⁵ Boone and Muller (2012) show that an increase in the price of an input always leads to some decline in downstream industry output in their very general model. Since demand curves are downward-sloping functions of price, this means that price will be unambiguously elevated.

elasticities that are approximately perfectly elastic, the change in price in the cases where industries are well described by the assumption of perfect competition should be close to 100 percent of the change in cost.¹⁴⁶

189. Second, in a monopoly (a single seller in the market), the increase in price can be more or less than 100 percent of the change in cost, and depends critically on the curvature of the demand curve.¹⁴⁷ With monopoly and a linear demand curve, price change must always be less than 100 percent; with a constant elasticity demand curve, the price change will always exceed 100 percent of cost.¹⁴⁸

190. Third, with imperfect competition more generally (more than a single seller, but less than perfect competition), the change in price can also be greater or less than 100 percent of a change in cost, with the outcome again depending on curvature of demand curves.¹⁴⁹ Some economists have argued that firms in imperfectly competitive industries “undertake nonprice strategies that shape demand curves into distinctly nonlinear forms to ensure that pass through is 100 percent or greater.”¹⁵⁰ Firms in industries with a high degree of competition in selling branded, differentiated products, in particular (as is the case with the computer and consumer electronics industries), may increase prices by amounts exceeding, equaling, or falling short of 100 percent of a cost change.¹⁵¹

191. Therefore, at least a portion of an increase in the cost of ODDs would be expected to show up in an increase in the price of computer and consumer electronic equipment – and consequent harm to consumers would be the predicted outcome of successful collusion. The fact of harm would basically be a given if ODD prices were shown to have been raised by collusion. Some considerations, discussed below, suggest that the change in finished good price might well be expected to equal or surpass 100 percent of the drive cost increase.

3. Empirical Studies in the Economics Literature Provide Broad Support for Pass-Through

192. Empirical studies of the precise extent of pass-through, which are numerous, report results which vary greatly by industry. Aaronson (2001), for example, finds undershifting (an increase in price less than 100 percent of a cost increase) of increases in the minimum wage

¹⁴⁶ See Harris and Sullivan, 1979, pp. 291-293 for this argument, and references to documentation of the empirical assertions.

¹⁴⁷ Note that if an input is used in fixed proportions to output, a fixed tax per unit output is equivalent to an increase in unit variable cost.

¹⁴⁸ See Cotterill, Ronald W., Leonard Egan, and William Buckhold. “Beyond Illinois Brick: The Law and Economics of Cost Pass Through in the ADM Price Fixing Case,” *Review of Industrial Organization*, 18(1):45-52, February 2001, p. 45-52.

¹⁴⁹ The key parameter is the elasticity of the price elasticity of demand, the degree to which the price elasticity of demand changes as prices increase. See, e.g., Cotterill, Egan, and Buckhold, 2001; Van Dijk, Theon, and Frank Verboven, “Quantification of Damages,” ABA Publications in Antitrust, 2005; Hepburn et. al., 2013.

¹⁵⁰ See Cotterill, Egan, and Buckhold, 2001.

¹⁵¹ See, e.g., Simon P. Anderson, Andre’ de Palma, Brent Kreider, “Tax incidence in differentiated product oligopoly,” *Journal of Public Economics* 81 (2001).

into fast food restaurant prices. But findings of overshifting (an increase in price exceeding 100 percent of the cost increase) are common. Besley and Rosen (1999), in their study of the effects of taxes on retail prices, find overshifting in more than half of the products they study. Young and Bielinska-Kwapisz (2002) find effects of taxes on alcoholic beverages prices exceeding 100 percent of the tax increase. In the international economics literature, too, estimated price impacts for exchange rate-driven cost increases exceeding 100 percent are not uncommon.¹⁵² Karp and Perloff (1989) find greater than 100 percent effects on price of taxes on Japanese color television set sales. This last example is particularly interesting because television sets are consumer electronic equipment, with a high degree of branding and product differentiation, a high degree of substitutability across brands, and substantial competition among producers.

193. Poterba (1996) references depression-era merchant interviews that “suggest incomplete forward shifting of sales taxes (pp. 165-166)” [i.e., pass-through greater than zero but less than 100%], but then goes on to cite two modern econometric studies (1971 and 1988) which find overshifting of sales taxes, and four studies of excise taxes that also show overshifting. Prof. Poterba characterizes his results as follows: “The empirical findings suggest that estimating the effect of sales taxes on prices for any single city is difficult; the point estimates of [coefficients] range widely and typically have very large standard errors... This paper presents evidence that broadly supports the view that retail sales taxes are fully forward shifted, raising consumer prices by the amount of the tax increase.” [i.e., 100% pass-through] (Poterba, 1996, p. 173.)

194. Analyzing the pass-through of cigarette taxes, Sullivan and Dutkowsky (2012) conclude there is overshifting. Sullivan and Dutkowsky also summarize relevant literature, writing:

Ashenfelter and Sullivan (1987) find that excise tax increases do not consistently lead to increased cigarette prices. The results of Sumner and Ward (1981); Harding, Leibtag, and Lovenheim (2010); and Chiou and Muehlegger (2010) indicate that prices are undershifted to consumers, that is, prices do not go up by the full amount of the cigarette tax. Sumner and Wolgenant (1985) and DeCicca, Kenkel, and Liu (2010) generally find that taxes are fully shifted to consumers; that is, prices go up by the exact amount of the tax, although some estimates from the latter study point to undershifting. On the other hand, Barzel (1976), Johnson (1978), Harris (1987), Coats (1995), Keeler et al. (1996), and Hanson and Sullivan (2009) find evidence of overshifting; that is, prices to consumers go up by more than the amount of the cigarette tax. Delipalla and O'Donnell's (2001) study with cross-country data yields mixed results, with some evidence pointing to overshifting and other findings indicating that undershifting [less than 100% pass-through] occurs.¹⁵³

¹⁵² See, e.g., Campa and Goldberg, 2005.

¹⁵³ R. Sullivan and D. Dutkowsky, “The Effect of Cigarette Taxation on Prices: An Empirical Analysis Using Local-Level Data,” *Public Finance Review* vol. 40, no.6 (2012), p. 688.

195. In their literature review, Sullivan and Dutkowsky cite only the 1987 study by Ashenfelter and Sullivan as not consistently supporting non-zero pass-through. Turning to the actual 1987 Ashenfelter and Sullivan study, these authors note in their conclusion that “One explanation for these anomalies that we have investigated thoroughly attributes them to measurement error. Indeed, more careful measurement does tend to confirm that tax increases are typically associated with price increases and, to a lesser extent, sales decreases.” (Ashenfelter and Sullivan, 1987, pp. 496-7.).

196. Knetter (1993) estimates a parameter which can be interpreted as related to pass-through of changes in costs due to exchange rate fluctuations—a positive value of this parameter represents greater than 100% pass-through, a value of zero is 100% pass-through, a value between 0 and -1 represents incomplete (<100%) but positive pass-through, -1 represents zero pass-through, and a value less than -1 would represent negative pass-through, i.e., prices decreasing as costs increased. Knetter estimates 52 values of this parameter for German, Japanese, US, and UK exports in his tables 1-4. Five of these 52 point estimates (three for Japanese exports, 1 for US exports, 1 for UK exports) are less than -1, and based on reported standard errors, none are statistically significant against a null hypothesis that the value is a small number greater than -1 (positive pass-through), and only 2 of these 5 estimates (1 in Japan, 1 in the UK) would reject a null hypothesis of 100% pass-through. So, no statistically significant negative or zero pass-throughs are found in this study either. Knetter points out (p. 479) that “[t]he unit-value series are sufficiently noisy that pooled estimates of b are not terribly precise.” (p. 479). Also, change in exchange rates does not just produce a change in costs of imported goods, it also affects the value of stocks of foreign exchange and foreign currency-denominated assets, and expectations about future movements in exchange rates, so unlike the economic theory of the impact of a pure change in costs on price, it is possible to construct theoretical explanations for negative coefficients on changes in exchange rate.¹⁵⁴

197. Campa and Goldberg (2005) observe that “most industries exhibit a striking degree of partial pass-through”.¹⁵⁵ They go on to conclude, “[i]n the longer run, pass-through elasticities are closer to 1”.¹⁵⁶ Examining the pass-through of minimum wages, Aaronson (2001) estimates many different specifications and models in which wage increases affect prices using differing lags over time. Summarizing his overall conclusion based on the various models he investigated, Aaronson writes, “[a]lthough the results are not robust to every specification check, the majority of the evidence suggests that restaurant prices rise with increases in the wage bill that result from minimum wage legislation.”

198. Analyzing the pass-through of alcohol taxes on prices, Kenkel (2005) summarizes his findings: “The preliminary results suggest that alcohol taxes are more than fully passed through to beverage prices. The general pattern of results is consistent with the limited evidence from earlier studies. In addition, this study provides the first evidence that taxes are over-shifted

¹⁵⁴ See for example, G. Gaulier, A. Lahrière-Révil, I. Méjean, “Structural Determinants of the Exchange-Rate Pass-Through,” CEPII, Working Paper No 2006-03, available at http://www.cepii.com/PDF_PUB/wp/2006/wp2006-03.pdf.

¹⁵⁵ Campa and Goldberg (2005), p. 684.

¹⁵⁶ *Ibid.*, p. 688.

in both on-premise and off-premise establishments, and that the pass-through patterns are similar across most popular brands of beer, wine, and spirits.”¹⁵⁷

199. The foregoing summary of pass-through studies shows the extent to which differences in input costs are reflected in output prices is entirely an empirical issue. Measuring pass-through is an area in which methods of empirical analyses are well established. Furthermore, based on both theory and the published studies in this area, a competent and well-trained professional economist would readily accept that the increase in computer and consumer electronics prices stimulated by an increase in ODD costs might well exceed 100 percent.

200. It is undisputed that overshifting is possible in markets with many suppliers of differentiated products and easy entry and exit, an environment known as “monopolistic competition.” Indeed, a price increase exceeding 100 percent of a change in the cost of production would be expected in industries where firms produce differentiated products in competitive conditions, and face economies of scale – that is, where their average cost of producing a product declines with level of output. As noted next, in competitive industries with differentiated products and relatively easy entry and exit (monopolistic competition), when there are economies of scale, overshifting will be the rule, not the exception.

201. Empirical studies by economists have characterized the personal computer industry as an industry which fits this description. For this reason, it would not be surprising to find that the impact of an ODD price increase on notebook or desktop computer prices is at or greater than 100 percent of the cost increase, in the market conditions that prevail for most, if not all, types of mass market computer and consumer electronics equipment. Indeed, previous studies of the personal computer industry have found pass-through rates near and even above 100%.¹⁵⁸

202. Intuitive reasons for why overshifting may occur have been put forward in two forms. First, as Fullerton and Metcalf write, under very general circumstances, when any market structure other than idealized perfect competition is considered:

Once imperfectly competitive markets are allowed, overshifting becomes a possibility and can be guaranteed in some model specifications. Overshifting can occur because of the existence of market power and strategic behavior among firms. Firms recognize that forward shifting of the tax will decrease demand for their product. Thus, under some circumstances, they will wish to raise the price more than the increase in tax to compensate for the revenue loss from decreased demand.¹⁵⁹

¹⁵⁷ Kenkel, Donald S.. 2005. “Are Alcohol Tax Hikes Fully Passed Through to Prices? Evidence from Alaska.” *American Economic Review*, 95(2): 273-277.

¹⁵⁸ I base this statement on price studies I have read or performed while serving as a consultant in other litigation. See for example, my study of pass-through in the DRAM antitrust litigation, available publicly as Exhibit 35 at <http://www.dramclaims.com/wp-content/uploads/2014/03/RR-of-Special-Master-Part-I-Ex-31-36.pdf>.

¹⁵⁹ D. Fullerton and G. Metcalf, “Tax Incidence,” in A. J. Auerbach & M. Feldstein (ed.), *Handbook of Public Economics*, (Elsevier: Amsterdam), 2002, chapter 26, p. 1825.

203. A second intuitive explanation of circumstances under which overshifting can occur includes the more specific situation where industries are characterized by economies of scale:

Somewhat more generally, taxes will be over-shifted whenever the industry supply curve slopes downward. A falling industry supply curve could occur because of economies of scale at the firm level, industry “spillover” effects that reduce average costs as output expands, or a favorable factor price effect. In any case, quantity demanded falls when a tax is imposed, which in turn raises average total cost and the prices firms must charge to remain in business. Thus, price rises both because of the tax itself, and because per unit costs rise as quantity declines. The combination of the two effects means that the increase in price is larger than the tax itself.¹⁶⁰

204. In short, while some degree of elevation in prices for finished goods would generally be the predicted impact of successful collusion upstream, in raising ODD prices, the extent to which pass-through into finished good prices fell short of, or exceeded, 100 percent is fundamentally an empirical issue.

4. The Defendants Themselves Acknowledge High Pass-Through Rates for Computers Sold Through Retailers

205. Some of the defendants acknowledge pass-through rates of computer costs to consumers often exceed 100%. For example, certain defendants have stipulated to pass-through rates greater than 100% for computers in other price-fixing litigation. *See* “Best Buy’s Downstream Pass-on Rates Estimated by Dr. Snyder” (p.6).¹⁶¹ Other pass through rates proposed by defendants are close to or equal to one. *See* Defendant’s discussion at page 2 and the tabulation of results at “Plaintiffs’ Downstream Pass-on Rates Estimated by Dr. McClave” (p.6).¹⁶²

5. Pass-Through Estimation Framework and Results Summary

206. In this section, I present the framework I use to measure the pass-through of overcharges to purchasers of ODD-using finished goods. As described above, economic theory generally predicts that prices of final goods made with a price-fixed input (in this case an ODD) would be higher than in the “but for” scenario without collusion.

207. Economic theory also holds that it is the incremental *total* cost of the product that is a determinant of product price.¹⁶³ ODD costs (including overcharges) would not be treated

¹⁶⁰ D. J. Young and A. Bielinska-Kwapisz, “Alcohol Taxes and Beverage Prices,” *National Tax Journal*, vol. LV, No. 1, March 2002, p. 59.

¹⁶¹ Defendants’ Notice of Motion and Motion for Partial Summary Judgment on Downstream Pass-on and Supporting Memorandum, In re TFT-LCD (Flat Panel) Antitrust Litigation, M07-1827 SI.MDL Dkt. No. 6338.

¹⁶² *Ibid.*

¹⁶³ Barro makes clear that initially, and whenever prices are set, marginal costs are one of the primary determinants of price. Barro, Robert J., “A Theory of Monopolistic Price Adjustment,” *Review of Economic Studies* (January 1972), 39(1), pp. 18-19.

differently than other costs, but would be aggregated with them to determine price. Retailers and distributors normally would have no idea what share of ODD Product cost was attributable to the ODD, nor would they be expected to treat the ODD cost (including its overcharge) differently even if they could identify it. Retailer testimony from this case confirms this understanding.¹⁶⁴

208. Based on this, my basic economic model of purchaser price takes the following form:

$$p_{it} = a_0 + a_1c_{it} + a_2j_i + a_3h_t + u_{it}. \quad (3)$$

209. In this equation, p_{it} represents the price of product i in period t . Prices are modeled as a linear function of the product's total cost, c_{it} . Pass-through is measured by the coefficient on the cost variable, represented by a_1 in equation 3. The pass-through model also controls for product characteristics for product i that affect its pricing (j_i);¹⁶⁵ the effect of aggregate industry supply and demand factors on prices generally for a group of related products at time t (h_t);¹⁶⁶ and a random disturbance to price for product i at time t (u_{it}).¹⁶⁷

210. Within this framework, I control for detailed product characteristics (j_i in equation 3) using one of two approaches, determined by statistical and theoretical considerations. The first approach is the fixed effects regression. I use the fixed effects approach when detailed information on computer components is not available in the data and when data are otherwise sufficient to reliably estimate pass-through.¹⁶⁸ An important advantage of the fixed effects approach is that it permits me to control for detailed product attributes, such as ODD type, hard drive size, CPU, and RAM, even without data on these attributes, by controlling for each product model number.¹⁶⁹ A requirement of the fixed effects approach is that product-level prices and

¹⁶⁴ For example, 30(B)(6) Videotaped Deposition of Stephen N. Deason, December 7, 2016 (Circuit City Deposition), at 123:25-124:6: "Q: ...Circuit City didn't have visibility into the cost of the components for a computer; right? A: To my knowledge, no. Q: Circuit City's negotiation was based on total cost to Circuit City; right? That's what Circuit City cared about? A: Correct."

¹⁶⁵ Product characteristics are generally constant over time for models of most ODD products.

¹⁶⁶ I control for demand factors using two approaches. In the first, I use GDP and a dummy variable for the introduction of Microsoft's Vista operating system to control directly for important macroeconomic and industry demand drivers. The release of Vista was notable for its lukewarm public reception (<http://www.nytimes.com/2008/03/09/business/09digi.html?scp=1&sq=vista&st=nyt>, viewed January 28, 2017). I also control for macroeconomic and industry demand using the more general approach of including monthly dummy variables. A full set of time period dummy variables captures the effects of all market conditions that are constant across products, but vary over time. However, as I explain below and in previous reports, time dummy variables also capture the effects of ongoing changes in odd product costs that may not be reflected in vendors' accounting systems. These cost changes drive prices at all retailers and distributors throughout the product cycle, but are only specifically attributable to cost in a regression model when a vendor purchases additional products.

¹⁶⁷ I assume this disturbance is independently distributed over products but not necessarily over time, within a product.

¹⁶⁸ Flamm I, ¶ 231. Flamm II, ¶¶ 167-171.

¹⁶⁹ "[The fixed effects estimator] will provide correct and consistent estimates of the pass-through rate even if unobserved product-specific effects are correlated with included variables, including product cost." Flamm I, ¶ 231. When fixed effects are used to control for product characteristics, cost is specified in either of two ways. The first way is to include a single, contemporaneous measure of cost (c_{it}) in the model, as in equation 3, while the second way is to include cost from the current and the preceding two periods: c_{it} , c_{it-1} , and c_{it-2} .

$$p_{it} = b_0 + b_1c_{it} + b_2c_{it-1} + b_3c_{it-2} + b_4j_i + b_5h_t + u_{it}. \quad (4)$$

costs are observed repeatedly over time. Data with repeated observations on prices and costs for individual products over time are referred to as panel data.

211. The second approach is the hedonic regression method. I use a hedonic approach when the detailed product characteristics were available in the data, particularly for customized Dell computers¹⁷⁰ and to measure cost pass-through into initial product prices. An important advantage of the hedonic price regression is that it allows us to control for detailed product characteristics and use cost variation across purchases or products to identify pass-through. The hedonic regression does not require that product-level price and cost observations are repeated over time. Data with price and cost observed for each product in a single period are referred to as cross sectional data.

212. Both alternatives to estimating pass through follow directly from equation 3. The approach used in any particular analysis depends on statistical and theoretical considerations. In short, fixed effects uses cost variation for products over time to identify pass-through while the hedonic approach uses cost variation across products to identify pass-through. Equation 3 provides a common method to measure pass-through at both the initial prices charged to IPPs and through later declines in price. As I explain further below, the hedonic approach measures pass through of the costs of manufacturing and selling a computer, including the ODD overcharge, into the initial prices of ODDs and ODD products. The fixed effects approach measures pass through of costs over the life of the ODD products.

213. In addition to using a statistical model that controls for detailed product characteristics and supply and demand factors, I use analytic strategies that control for potential differences in pass-through rates among ODD products, as well as differences arising due to the unique business practices and market conditions of each vendor. To the extent these factors could lead to differing pass-through rates, my approach controls for them.

214. *My methodology controls for product diversity* - The class definition includes ODDs sold in three ODD product categories: laptops, desktops, and internal/external ODDs.¹⁷¹ Product category is not the only element of product diversity, as each of these product categories includes an array of product configurations manufactured by various OEMs under several brand names.

215. My approach addresses product diversity. First, my analyses are conducted at the product category level. I produce separate results for desktops, laptops, and drives. That is, laptop pass-through rates are not assumed to be the same as desktop pass-through rates or those of internal/external ODDs. Pass-through rates are estimated separately for each product category.

In this case, the pass-through rate is $b_1 + b_2 + b_3$ from equation 4, unless the effects of lagged costs are statistically unrelated to price. To determine this, I conduct a chi-square test of the hypothesis that the joint effect measured by b_2 and b_3 is equal to zero. In cases when this hypothesis cannot be rejected, I measure the pass-through rate as a_1 from equation 3.

¹⁷⁰ For Dell, where products are customized to customer orders, characteristics, j_i , are observed, so characteristic variables are included directly in the model. Because Dell computers reflect a high degree of customization, the data are analyzed at the transaction level. Flamm I, n. 174.

¹⁷¹ Revised Motion at p. 5.

216. Beyond that, as indicated above and by equation 3, my estimation model controls for detailed computer features by including control variables for ODD, CPU, screen size, hard drive, and RAM, among others. Included among these characteristics are the manufacturer of the computer.

217. *My methodology controls for seller diversity* - ODD products are manufactured under a variety of arrangements by several OEMs and sold by them to end use customers or to a variety of vendors. These vendors include distributors, online retailers, brick and mortar retailers, and system integrators and other value-added resellers serving business end users.

218. My approach addresses vendor diversity. To control for this diversity, my pass-through analysis is conducted at the vendor level, producing separate pass-through estimates for each entity providing usable data. For example, Best Buy's pass-through rates are not assumed to be the same as CompUSA's pass-through rates. Consequently, my method accounts for factors that could cause pass-through rates to vary because of vendor-specific pricing strategies¹⁷² or market conditions.¹⁷³ Notably, even permitting pass-through to vary by vendor, my results show positive and statistically significant pass-through in nearly every case.¹⁷⁴

219. *My methodology controls for customer diversity* - I also point out that several of the vendors for which I have estimated pass-through rates primarily serve business end users, while others, like Best Buy and CompUSA, sell primarily to individual consumers. For example, I have estimated pass-through for PC Connection, which describes itself as “[delivering] valuable IT services and advanced technology solutions to business, government, healthcare, and education markets.”¹⁷⁵ I also provide estimates for Ingram Micro. Ingram Micro provides a broad array of business services, describing itself as offering “a comprehensive portfolio of IT and mobility products, services and capabilities globally. Ingram Micro adds value to our comprehensive product portfolio via our suite of services, making us the one-stop shop for our customers.”¹⁷⁶ I also provide estimates for certain Dell Brands sold exclusively through its business channels. The Optiplex 380, Latitude E5410, and the Latitude E5500 all were sold through Dell's business channels. Thus, the methodology I use also controls for potential differences in pass-through rates caused by end-user customer characteristics.

220. *My analysis covers substantially all of the distribution chain* - My analysis includes vendors representing substantially all of the distribution chain. I have estimated pass-

¹⁷² For example, pricing strategies that resellers may use to drive sales include everyday low price, HiLo, focal point pricing, loss leader, door buster, bundling, discounts, promotions, rebates, discount codes, gift card promotions, group discounts, in-store sales, or free or reduced shipping.

¹⁷³ For example, a vendor's market condition can vary based on the extent it gives or receives volume discounts, price protection, co-op advertising dollars, market development funds, sales-based incentives, or other ad-hoc rebates.

¹⁷⁴ I note that there may be circumstances when it would be useful to combine data sets across vendors, such as to address data limitations or to examine various theoretical or statistical questions. For instance, in one analysis conducted for this report, I combine HP's standard costs with Best Buy's initial prices to examine “end-to-end” pass through rates. It is possible that certain other analyses could benefit from combining data sets. In such cases, seller differences could be addressed using an alternative approach to that discussed here.

¹⁷⁵ <http://www.pcconnection.com/IPA/Content/About/PCCB2B/Default>.

¹⁷⁶ <http://corp.ingrammicro.com/Solutions.aspx>.

through rates for OEMs (including Dell, HP, and Toshiba), ODD component distributors (including Synnex and ASI), online retailers (including Newegg and PC Connection), brick and mortar retailers (including Best Buy and CompUSA), and ODD product distributors (including Ingram Micro).

221. For retailers, I have conducted pass-through analyses for companies that make up 72.5% of the sales reported in TWICE's "Top 25" lists of computer retailers from 2003 to 2008. These companies include representatives of six of the top retail store types. These six store types represent 84.2% of "Top 25" sales during the 2003-2008 period. See Exhibit 5.

222. By comparing the TWICE-reported PC sales to industry totals reported by Datamonitor and IDC, I estimate that the "Top 25" retailers account for 75-86% of the U.S. market. Thus, while my pass-through studies do not include "mom & pop" stores, such small players do not seem to represent a large share of the PC market. See Exhibit 6.

223. My coverage of distributors is also good. In 2004, CRN published an article showing a list of top distributors of computer products (including distributors with at least \$1 billion in 2003 sales). My pass-through analyses include three companies from this list, including the dominant player, Ingram Micro, which alone comprises 37% of sales among the top distributors. The three companies we include—Ingram Micro, Synnex, and ASI—make up over 45% of top distributor sales. I also include the smaller distributor SED in my analysis. See Exhibit 7.

224. It is the case, however, that no usable data were provided by an ODM or EMS for pass-through estimation.¹⁷⁷ ODMs/EMSs make computers and electronics assemblies for OEMs. ODMs are "original design manufacturers" that design and manufacture computers for OEMs to sell with the OEMs' branding. EMSs, or "electronics manufacturing services," are related entities that also manufacture and distribute computer and computer component assemblies for OEMs.

225. EMS and ODM business models are based on the full pass-through of costs. For example, Celestica reported in SEC filings that it passed costs on to its customers:

In order to minimize risk associated with inventory, we primarily order materials and components only to the extent necessary to satisfy existing customer orders. We have implemented specific inventory management strategies with certain suppliers, such as "supplier managed inventory"...and "real-time component pricing"...designed to minimize the risk to us of cost fluctuations...*In providing electronics manufacturing services to our customers, we are largely protected from the risk of*

¹⁷⁷ To my knowledge, EliteGroup is the only ODM/EMS to provide any data at all, though they did not provide relevant cost data.

*fluctuations in inventory costs, as these costs are generally passed through to customers.*¹⁷⁸

226. Celestica also reports that it typically “require(s) the customer to purchase from us any unused inventory that we have purchased to fulfill that customer’s forecasted manufacturing demand.”¹⁷⁹

227. It was typical of EMS and ODM companies during this period to periodically adjust their selling prices to OEMs to pass through changes in component costs. Sanmina-SCI,¹⁸⁰ another leading EMS firm, reported that when component costs increased, it increased its selling prices proportionally. In its 2001 Annual Report, SCI explained,

SCI’s revenues are primarily generated from “turnkey” manufacturing services, in which the cost of the components used to assemble the products being manufactured is included in the selling price of the Company’s services. Accordingly, average selling prices for the Company’s products fluctuate proportionally to components prices.”

228. Similar to Celestica, Sanmina-SCI describes a 100 percent pass-through business model, explaining in 2007 that it “procure[s] inventory based on specific customer orders and forecasts.”¹⁸¹ Sanmina further explained that “the customer typically remains liable for the cost of the materials and components that we have ordered to meet the customer’s production forecast but which are not used...”¹⁸² Annual reports for ODMs/EMSs thus indicate that they typically pass-through all costs. Therefore, computer costs, including ODD overcharges, would be expected to be passed through at 100 percent or greater by ODMs/EMSs, which would have a neutral to positive impact on the total distribution channel pass-through rates that include ODM/EMS production. I discuss my calculation of channel-weighted pass-through in section VI.

229. **Table 10** summarizes the average pass-through rates for each major segment of the ODD product supply chain. Average pass-through rates, based on roughly 100 individual estimates, are near 100 percent, implying that nearly all of defendant’s overcharges were passed through to IPPs. Below, I provide a detailed description of my analysis and results, showing nearly universal statistically significant positive pass-through rates, with values predominantly close to or over 100 percent.

¹⁷⁸ Celestica Form 20-F, 2004, p. 22. Emphasis added. This or a similar statement was also included in Celestica’s annual reports in 2005 and 2008.

¹⁷⁹ Celestica Form 20-F, 2008, p. 33.

¹⁸⁰ Sanmina and SCI merged in 2001 (<http://www.sfgate.com/bayarea/article/Sanmina-buys-rival-SCI-Systems-2899690.php>). In its 2007 annual report, Sanmina-SCI reported that, among other services, it “provide[s] services to multiple major PC manufacturers. These services include primarily BTO and CTO manufacturing of desktop PC systems serving primarily the enterprise markets.” Sanmina-SCI identified its competitors as “Celestica, Inc., Flextronics International Ltd., Hon Hai (FoxConn), and Jabil Circuit, Inc” (p. 16).

¹⁸¹ Sanmina 2007 Annual Report (10-K), p. 31.

¹⁸² Sanmina 2007 Annual Report (10-K), p.15.

Table 10: Pass-Through Rates by Distribution Channel

Distribution channel segment	<u>Desktops</u>	<u>Laptops</u>	<u>Drives</u>
EMS/ODM	100%	100%	--
OEM	112%	106%	88%
Distributor	102%	102%	103%
Retailer	103%	104%	109%

Note: See pass-through and volume of commerce exhibits included with this report. The EMS/ODM rate is based on descriptions from annual reports. See the text for details.

B. Characteristics of the Computer Industry Support the Conclusion that Prices for Effectively All ODD Products Were Affected by the ODD Price Conspiracy

230. In this section, I expand on the theoretical basis for my pass-through analysis. In the process, I address arguments previously made by defendants that overcharges would not be passed through because of the following factors:

- The ODD is a small share of the cost of manufacturing a computer.¹⁸³
- The overcharge on the ODD is small relative to the price of a computer,¹⁸⁴ and that retailers' pricing strategies, primarily the use of price points ending in 49 and 99, would prevent them from adjusting prices to offset the overcharge.¹⁸⁵

231. In context of defendants' arguments, this Court expressed concern in its October 2014 Order that IPPs had not presented a persuasive explanation as to why it would be "reasonable to assume a uniform pass-through rate given that ODDs typically make up a relatively small portion of the cost of the products into which they are incorporated, and given the existence of price points—i.e., the common practice in the industry of selling products costing in the hundreds of dollars at prices just under the next \$100 mark." Order at 21. The Court posed the hypothetical situation where the overcharge paid by a direct purchaser was only \$4, and whether it was plausible that the retailer would then raise the price of a computer that otherwise would sell for \$999 to \$1003.

232. I addressed these concerns in previous reports but reiterate the main elements of my analysis in this report. Briefly summarizing, my analyses show that the answer to the Court's question is as follows: purchasers of a computer ("A") at a price point such as \$999 paid higher prices than they would have but for the conspiracy. In the but-for world, a retailer dead set on the price point in question would have offered a different, higher quality computer ("B") at that price point. In the but-for world, any indirect purchasers completely indifferent between the features of computers A and B would be able to purchase a lower quality computer A at a lower price,

¹⁸³ For example, Declaration of Dr. Michelle M. Burtis in Support of Defendants' Opposition to Class Certification, October 21, 2013 (Burtis I), ¶29.

¹⁸⁴ For example, Burtis I, ¶30.

¹⁸⁵ For example, Burtis I, ¶91.

perhaps from a competitor such as Dell, so that the overcharge on computer A is still the proper measure of damages for any hypothetical buyers indifferent to quality improvement.¹⁸⁶ Therefore, hedonic price regressions adjusting for product quality provide a conservative measure of damages done to those who purchased computers at price points such as \$999.

233. My pass-through estimates capture the change in price that would be caused by a cost increase for fixed bundles of characteristics. That is, my pass through estimation freezes actual world computer characteristics and then determines how the price for that fixed bundle of characteristics would change due to a cost reduction in the but-for world of cheaper ODD prices. This is the proper way to measure damages to IPPs; it is inherently conservative in not capturing the additional benefit to consumers who would have chosen a higher quality computer at the original price point, rather than simply paying less for the same computer, in the but-for world.

234. Substitution among various computer components are most plainly and directly evident in sales of configure-to-order computers, where price varies directly with configuration choices explicitly chosen by consumers as they buy their computer—as in Dell’s direct sales data, and where there is no single fixed price at which a computer is initially sold. But the substitutions also show up—and with them a large and statistically significant link between component cost and initial price point—when initial prices for pre-configured computer models are appropriately analyzed.

235. While a retailer, say Best Buy, may not have initially sold a new computer model at a \$995 price point, or a \$1005 price point, Dell almost certainly did sell such configurations directly to consumers, and Best Buy has testified that its primary competitor throughout the class period was Dell.¹⁸⁷ In addition, other retailers and OEMs would pack as many desirable features as possible into the computers they sold in competition with Best Buy’s offerings at a \$999 price point, attempting to steal market share from Best Buy and its OEM suppliers—because this is an intensely competitive industry. Any increase in component cost would lead to an industry-wide reduction in the features—i.e., in quality—included in a computer model designed by an OEM and retailer to sell at a retailer’s chosen price point. The reduction in quality at some price point creates an increase in quality-adjusted price for these computers, and therein lies the harm from component price-fixing for a buyer of computers sold by some retailer at some targeted, initial price point. My empirical analysis of pass-through strongly supports this conclusion.

236. Further, other empirical studies I have conducted confirm that large and small cost declines recorded after sellers first purchase orders are passed-through into price declines, typically on about a one-for-one basis. Any effect of the alleged collusion in slowing cost declines would also slow further computer price declines for buyers, even after the initial impact on first sales price had been felt.

237. In the remainder of this section, I fully discuss the following topics:

¹⁸⁶ For other purchasers who would have chosen computer B in the but-for world, \$5 is merely a lower bound on the harm done to them. These indirect purchasers would have been \$5 better off in the but-for world if they purchased computer A, so purchasing their preferred computer B, had it been available in the but-for world, would leave them more than \$5 better off. See Flamm IV, Section III.C for further elaboration on this framework.







¹⁸⁷ See Deposition of Jason Bonfig, Sept. 13, 2013 (“Best Buy Depo.”) at 145.

- Retailers in the real world are not limited to fixed price points, and routinely boost sales by offering discounts in the range of the overcharges I have estimated.
- To the extent that retailers use fixed price points, small cost changes induce them to adjust the configuration of the computer.
- Competition in the computer industry is extremely intense and takes place in the context of continually declining materials costs.
- The ODD is considered a “Key Component,” particularly with regard to achieving cost savings.

1. Retailers frequently use small price adjustments in the form of discounts to boost sales

238. Advertisements by Best Buy and other retailers make it clear that in practice retailers attempt to boost sales on high price computers using small discounts. **Figure 15** shows recent online advertisements by Best Buy of promotional \$5 discounts off a \$499 computer, \$8 off a \$769 computer, \$27 off an \$899 computer, and \$20 off a \$1499 computer:

Figure 15: Best Buy Advertised Small Discounts to Promote Sales, May 12, 2015 (Online)

 <p>Asus - 19.5" All-in-One - Intel Celeron - 4GB Memory - 500GB Hard Drive - Black Model: E2301UK-01 SKU: 702017</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: Intel® Celeron® processor; 19.5" display; 4GB memory; 500GB hard drive Special features: Built-in wireless networking; HDMI output; webcam Note: DVD/CD drive not included <p>5.0 (1 Review)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>	<p>\$331.99 CLEARANCE</p> <p>SAVE \$18 (Reg. \$349.99)</p> <p>Add to Cart</p> <ul style="list-style-type: none"> Free Shipping \$100 Off Tech Support: Find Out How \$25-\$50 Off Select Adobe Titles: See How <p>Open Box from: \$254.59</p>	<p>Desktop Computers - Best Buy</p> <p>IBUYPOWER - Desktop - 8GB Memory - 1TB Hard Drive - Black/Red Model: BG695K SKU: 5574127</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: Intel® Pentium® processor; 8GB memory; 1TB hard drive Special features: 4GB dedicated graphics; built-in wireless networking; HDMI output <p>4.2 (5 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>
 <p>Lenovo - 15.6" Portable Touch-Screen All-in-One Computer - Intel Core i5 - 4GB Memory - 500GB Hard Drive - Black/Silver Model: HORIZON 25-F0K0000US SKU: 0449721</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i5 processor; 15.6" display; 4GB memory; 500GB hard drive Special features: Touch screen; built-in wireless networking; Bluetooth; wireless keyboard and mouse; voice recognition; webcam Note: DVD/CD drive not included <p>4.3 (25 Reviews)</p> <p>Check Shipping & Availability</p>	<p>\$949.99 CLEARANCE</p> <p>SAVE \$9 (Reg. \$959.99)</p> <p>Add to Cart</p> <ul style="list-style-type: none"> Free Shipping \$100 Off Tech Support: Find Out How Save \$30 or \$50 on a Printer: See How <p>Open Box from: \$654.59</p>	<p>Dell - XPS Desktop - Intel Core i5 - 12GB Memory - 1TB Hard Drive - Black Model: X5700-1263BUX SKU: 5559042</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i5 processor; 12GB memory; 1TB hard drive Special features: 1GB dedicated graphics <p>4.6 (119 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p>
 <p>Lenovo - Desktop - Intel Core i3 - 6GB Memory - 1TB Hard Drive - Black Model: H50-10E7007US SKU: 0449812</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i3 processor; 6GB memory; 1TB hard drive Special features: Built-in wireless networking; HDMI output <p>4.4 (75 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>	<p>\$494.99 CLEARANCE</p> <p>SAVE \$5 (Reg. \$499.99)</p> <p>Add to Cart</p> <ul style="list-style-type: none"> Free Shipping \$100 Off Tech Support: Find Out How \$25-\$50 Off Select Adobe Titles: See How 	<p>Asus - Chromebox - Intel Core i3 - 4GB Memory - 16GB Solid State Drive - Black Model: CHROMEBOX-M076U SKU: 5345164</p> <ul style="list-style-type: none"> Google Chrome OS Technical details: 4th Gen Intel® Core™ i3 processor; 4GB memory; 16GB solid state drive Special features: Built-in wireless networking; Bluetooth; HDMI output; wireless keyboard and mouse Note: DVD/CD drive not included <p>4.0 (3 Reviews)</p>
 <p>Dell - Inspiron 23" Touch-Screen All-in-One Computer - 8GB Memory - 1TB Hard Drive - Black/Silver Model: I02350T-1670LX SKU: 585929</p> <p>Only at Best Buy</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i5 processor; 23" display; 8GB memory; 1TB hard drive Special features: Touch screen; built-in wireless networking; Bluetooth; wireless keyboard and mouse Note: DVD/CD drive not included <p>4.4 (163 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>	<p>\$969.99 CLEARANCE</p> <p>SAVE \$30 (Reg. \$999.99)</p> <p>Add to Cart</p> <ul style="list-style-type: none"> Free Shipping \$100 Off Tech Support: Find Out How \$25-\$50 Off Select Adobe Titles: See How <p>Open Box from: \$872.99</p>	<p>All Desktops - Best Buy</p> <p>Lenovo - Horizon II 27" Portable Touch-Screen All-in-One Computer - 8GB Memory - 1TB Hard Drive - Silver/Black Model: LENOVO HORIZON II - F0K0000US SKU: 5559038</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i5 processor; 27" display; 8GB memory; 1TB hard drive Special features: 3GB dedicated graphics; touch screen; built-in wireless networking; Bluetooth; wireless keyboard and mouse; webcam Note: DVD/CD drive not included <p>4.2 (55 Reviews)</p> <p>Check Shipping & Availability</p>
 <p>Asus - Essentio Desktop - 12GB Memory - 2TB Hard Drive - Black Model: M51AD-000 SKU: 5010028</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i7 processor; 12GB memory; 2TB hard drive Special features: 1GB dedicated graphics; built-in wireless networking; Bluetooth; HDMI output <p>4.5 (190 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>	<p>\$898.99 CLEARANCE</p> <p>SAVE \$101 (Reg. \$999.99)</p> <p>Add to Cart</p> <ul style="list-style-type: none"> Free Shipping \$100 Off Tech Support: Find Out How \$25-\$50 Off Select Adobe Titles: See How 	<p>Apple® - 21.5" iMac All-in-One Computer - 8 GB Memory - 1 TB Hard Drive Model: M097LLA SKU: 7010143</p> <p>Intel Core i5 2.90 GHz - Desktop Full HD Display - NVIDIA GeForce GT 750M 1 GB Graphics Card - Wireless LAN - Bluetooth - Webcam - Mac OS X 10.9 Mavericks - Display/Print</p> <p>4.8 (2,603 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>
 <p>Lenovo - 23.8" Touch-Screen All-in-One Computer - Intel Core i5 - 8GB Memory - 1TB Hard Drive - Black Model: B50-F0K0001US SKU: 0446703</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i5 processor; 23.8" display; 8GB memory; 1TB hard drive Special features: Touch screen; built-in wireless networking; Bluetooth; wireless keyboard and mouse; HDMI output; voice recognition; webcam <p>4.5 (121 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>	<p>\$872.99 CLEARANCE</p> <p>SAVE \$27 (Reg. \$899.99)</p> <p>Add to Cart</p> <ul style="list-style-type: none"> Free Shipping \$100 Off Tech Support: Find Out How \$25-\$50 Off Select Adobe Titles: See How <p>Open Box from: \$765.99</p>	<p>Asus - Desktop - Intel Core i7 - 16GB Memory - 2TB Hard Drive + 128GB Solid State Drive - Black Model: G16A-US005 SKU: 5793185</p> <ul style="list-style-type: none"> Windows 8.1 64-bit Technical details: 4th Gen Intel® Core™ i7 processor; 16GB memory; 2TB hard drive; 128GB solid state drive Special features: Blu-ray playback; built-in wireless networking; Bluetooth; HDMI output <p>4.5 (2 Reviews)</p> <p>Included Free: SecureAnywhere Internet Security (3-Device) (6-Month Subscription) - Windows/Mac/iOS/Android</p> <p>Check Shipping & Availability</p>

239. Internet retailer Newegg also provides easily accessible real world examples of price discounts that almost precisely match the price adjustments to a \$999 computer proposed as

an implausible hypothetical counterfactual by the defendants.¹⁸⁸ **Figure 16** shows three high-end (Intel i7 4790K processor) CyberpowerPC-branded computers priced by Newegg at \$999.99, one offered with \$9.99 shipping, another offered with \$4.99 shipping, still another offered with free shipping. Similarly, a high-end Lenovo computer with the same high end Intel processor was offered for \$1089 (a \$10 reduction from its \$1099 list price) and \$6.99 shipping. Newegg seems to adopt a highly varied menu of small promotional changes in prices, often in the form of discounts to shipping charges, in its efforts to stimulate sales of its products. The example of a \$4 discount or price increase on a \$999 computer, far from being implausible, seems to be common at Newegg, and is reflected in the varied menu of small changes in promotional shipping fees offered with the \$999 computers it offers for sale.

¹⁸⁸ For example, Burtis I, ¶89.

Figure 16: Shipping Costs at Newegg


5/13/2015 CyberpowerPC Desktop PC Gamer Xtreme H245 Intel Core i7 4790K (4.0GHz) 16GB DDR3 2TB HDD Windows 8.1 64-Bit - Newegg.com

TRY ▶ Free 30-day trial when you sign up for a 12-month membership.

Log in or Register \$53.00 (1 Items) Wish List Feedback Help

Shop All Stores Keywords, Model # or Item # Search all SEARCH Marketplace

Home > Computers & Tablets > Desktop & All-in-One Computers > Desktop Computers > CyberpowerPC > Item#: N82E16883229612



CyberpowerPC Desktop PC Gamer Xtreme H245 Intel Core i7 4790K (4.0GHz) 16GB DDR3 2TB HDD Windows 8.1 64-Bit

Free Grand theft auto V w/ purchase, limited offer

4 / 5 (*) | Write a Review

In stock. Limit 5 per customer.

- Intel Core i7 4790K (4.0GHz)
- 16GB DDR3 2TB HDD
- Windows 8.1 64-Bit
- AMD Radeon R9 270 2 GB

FREE SHIPPING AVAILABLE

Qty: 1 ~~\$1,149.99~~ **\$999.99**

Save: \$150.00 (13%)

Sold and Shipped by: Newegg

Protect Your Investment!


☐ 1 Year Onsite Extended Repair Plan \$45.00 (more options)

☐ 1 Year DriveSavers Data Recovery \$14.00 (more options)

Add to Wish List Price Alert

ADVERTISEMENT

Home > Computers & Tablets > Desktop & All-in-One Computers > Desktop Computers > CyberpowerPC > Item#: N82E16883229573



CyberpowerPC Desktop PC Gamer Xtreme H355 Intel Core i7 4790K (4.0GHz) 8GB DDR3 2TB HDD Windows 8.1 64-Bit

Free Grand Theft Auto V w/ purchase, limited offer

Be the first to review this product.

In stock.

- Intel Core i7 4790K (4.0GHz)
- 8GB DDR3 2TB HDD
- Windows 8.1 64-Bit
- NVIDIA GeForce GTX 750 Ti 2GB

Qty: 1 ~~\$1,099.99~~ **\$999.99**

Save: \$100.00 (9%) \$9.99 Shipping (t)

Sold and Shipped by: Newegg

Protect Your Investment!

☐ 1 Year Onsite Extended Repair Plan \$45.00 (more options)


☐ 1 Year DriveSavers Data Recovery \$14.00 (more options)

Add to Wish List Price Alert

ADVERTISEMENT AdChoices ▶

Ask Or Answer A Question

Home > Computers & Tablets > Desktop & All-in-One Computers > Desktop Computers > CyberpowerPC > Item#: H02E14083220673



CYBERPOWERPC
Desktop PC Gamer Xtreme H355 Intel Core i7 4790K (4.0GHz) 8GB DDR3 2TB HDD Windows 8.1 64-Bit
 Intel Devil's Canyon and NVIDIA GeForce GTX 750 For High-End Gaming
 Be the first to review this product.

In stock.

- Intel Core i7 4790K (4.0GHz)
- 8GB DDR3 2TB HDD
- Windows 8.1 64-Bit
- NVIDIA GeForce GTX 750 TI 2GB

Ask Or Answer A Question

QTY: 1

\$999.99
 Save: \$100.00 (9%)
 \$4.99 Shipping ()

Sold and Shipped by: **Newegg**

Protect Your Investment!

☐ 1 Year Onsite Extended Repair Plan \$45.00 (more options)

☐ 1 Year DriveSavers Data Recovery \$14.00 (more options)

Add to Wish List Price Alert

PLAY MORE, WORK EASIER
 Upgrade to a new PC, laptop or tablet.

240. Newegg's promotions show it must think small price differences affect sales. Moreover, Newegg is clearly cognizant of the impact that even these small discounts have on its profitability, otherwise it would offer free shipping on all computers over a certain price.

241. Deposition testimony by retailers has also shown that prices are constantly, continuously, and routinely changed in response to competitive market conditions in the market for ODD Products.¹⁸⁹ Defendants' expert also observed that retailers and other vendors make small price adjustments through discounts and other pricing strategies.¹⁹⁰ There is broad evidence showing that the hypothetical small price change on an expensive PC is eminently plausible, and firmly grounded in the real world of retailing practice.

2. All Indirect Purchasers Were Harmed

242. To understand how cost affects prices, it is important to understand the price-setting process for OEMs manufacturing computers for resale by U.S. retailers. Computer OEMs manufacture both configure-to-order (CTO) and fixed, pre-configured computers. CTO computers are configured by consumers when sold directly to them online or through kiosks at shopping malls or retail stores. Prices for CTO computer models vary directly with the configuration selected by the consumer. My analysis of Dell computer pricing, presented below, analyzes pass-through in direct sales by Dell to customers for CTO laptops and desktops.

¹⁸⁹ For example, Deposition of George Hussain Ali (TigerDirect) at 87:1-87:5 ("Q. And how often did TigerDirect, during the relevant time period, update the price for a given model of an ODD product? A: It could be as much as every day."); Deposition of Jason Bonfig (Best Buy) at 174:5-174:8 (Q. Best Buy makes daily price changes in the categories of desktops and laptops? A. Yes.).

¹⁹⁰ See Burtis I, para 38-39.

243. Pre-configured computers are sold by retailers, OEMs, or through online retailers. Pre-configured computers have a fixed model number, or SKU, that defines the computer configuration being sold.

244. Large retailers (for example, Best Buy), negotiate directly with computer OEMs over the details of the pre-configured computers to be given shelf space and carried in inventory at their stores and warehouses. Ahead of the next wave of computer introductions, the retailer confers with the computer OEM and describes what features it would like to offer in a computer sold in a particular “price band.” A price band typically has a \$30-50 range in which the retailer would like to slot a competitive computer model. The computer OEM offers configurations that best achieve the retailer’s feature preferences while also trying to meet the retailer’s cost target. The cost target (that is, the price charged by the OEM to the retailer) is designed to allow the retailer to make an adequate profit on the sale¹⁹¹ while simultaneously maintaining an adequate profit margin for the OEM. Thus, the OEM has two targets to meet—the retailer’s price to final buyers, designed to allow the retailer to make its required profit margin (equal to the expected sale price minus the price paid to the OEM by the retailer), and the OEM’s own internal cost, which must be low enough to allow it to make an adequate profit.¹⁹²

245. The retailer wants the best possible combination of features desired by consumers at a price point to generate a high sales volume given the profit margin it desires at that price point. The computer OEM wants the retailer to be able to sell through large volumes as well, and

¹⁹¹ Defendants have observed that the retailer data used in my pass-through analysis show certain products were priced below their recorded cost at certain times (e.g., Burtis I, ¶¶ 98-99). My discussion here does not imply that every model (or OEM or retailer) must realize a profit, but is a more general description of the ways the OEMs and retailers work toward meeting their fundamental economic objectives of profit maximization. It is also important to point out that the produced product-level Best Buy cost data do not include all cost reductions, price protection adjustments, rebates, and other margin enhancements given by OEMs to Best Buy. The issue of mismeasurement of variables is discussed in greater detail below.

¹⁹² See, e.g.,

- [REDACTED]
- DELL-ODD-00206326 at 206326 (“Market driven competition and migration of volume towards the \$500-\$800 price band continues”);
- DELL-ODD-00206342 (outlining cost target for computer of \$550 and emphasizing current cost of \$562.62 – meaning \$12.62 decrease in costs necessary);
- ODD-HP155989 (HP awarded Wal-Mart’s business at \$478 Summer price point for PC);
- ODD-HP170840 (“Strong retail feedback is that we need to hit \$1469-\$1499. Currently the sku is \$100-\$130 too expensive. Assuming we hit the \$1469-\$1499 price point by going with a E6400 and/or lower graphics card, the volume numbers are coming in strong. If we don’t hit the \$1469 price point BBY [Best Buy] volume will drop to 2K or may not assort.”); ODD-HP170846 (targeting a retail margin of 10% and margin for HP of 8%); and
- [REDACTED]

wishes to produce the computer model and sell it to the retailer at a price that gives the OEM an adequate profit margin.¹⁹³

246. Retailer Best Buy, for example, has a detailed statistical model of current consumer demand for features that it uses to predict sell-through at different prices for different feature bundles. Best Buy uses these models as the basis for the design of new pre-configured computer models that it requests from OEMs.¹⁹⁴

247. Every three-to-four month selling season, Best Buy negotiates with computer OEMs over the details of computer models to be stocked at its stores and sold in different price bands. Documents produced in this case show that the OEMs respond to Best Buy's requests with an evaluation of the feasibility of selling a computer in a price band, given both the OEM's and Best Buy's cost targets, and whether those cost targets are achievable through either hard bargaining with their component suppliers or through changes and substitutions in the requested feature set. The OEM may even suggest to the retailer the most feasible price within the price band for a computer with the requested feature set.¹⁹⁵

¹⁹³ See, e.g.,

- DELL-ODD-00110848 at 28 (showing forecast sell-through rates of Dell notebook);
- ODD-HP151746 (showing, by account, forecasted sell-through rate for new proposed model); and
- ODD-HP201223 ("Basically – if we want high volume SKUs in any region, the cost of the drives has to be lower (closer to \$50-\$60). If we want to just be in the 5-15k range per cycle the [sic] we we can do dual format in the high format in the high price points.").

¹⁹⁴ Best Buy Depo. at 19:25-20:24 (Defense Counsel: "Could you explain to me what Best Buy's value equation tool is? A: Yes. Best Buy's value equation is a tool that's used by the computing hardware divisions, specifically laptops and desktops, and it is a tool that measures sales information at a component level. So the way that the tool works is it takes the millions of customers that purchase in a category with us on a quarterly basis or monthly basis. It regresses that sales information to try to find individual customer value for components, a screen, a hard drive. A laptop brand, for example, will have a value that has no physical tie to cost. It only has a physical tie in to sell-through rates. And that tool is what the teams use to create assortments that they believe will have better sell-through rates with our customers and actually be more aligned with the things that our customers want. Q: Are optical disk drives or the type of optical disk drive one of the components which is taken into account by the value equation tool? A: Optical disk drives would be listed on the value equation tool.").

¹⁹⁵ See, e.g.,

- [REDACTED]
- ODD-HP170701 (HP trying to make a "\$1499 price point" by going "to lower cost components.");
- ODD-HP170846 (HP looking to "qualify a lower processor and lower graphics card" as "Opportunities to reduce cost.");
- ODD-HP170854 (HP "I would be willing to explore giving up a CPU bin (2.4 to 2.1) if we can lift the multi-taking requirement.");
- ODD-HP177074 at 177076] (HP stating it will continue to use a DVD-ROM as changing "will impact \$6 to our GM and not a good option for us.");
- [REDACTED]

248. The resulting prices often end in \$49 or \$99, but it is important not to overstate the prevalence of such rigid price points. A Best Buy executive testified that there is no company policy at Best Buy requiring prices to end in \$49 or \$99.¹⁹⁶ Other retailers confirmed that focal point pricing—focusing on ten dollar increments (versus rounding to the nearest dollar)—is not standard industry practice.¹⁹⁷

249. And in fact, many different initial price points for new computer models are observed in Best Buy data. **Table 11** demonstrates that Best Buy adjusts prices frequently, as evidenced by the fact that for about 60 percent of these computer models, the price point at

■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]

- ODD-HP133202 (HP requesting savings of \$1.46, \$3.35 and \$4.00 on ODDs from suppliers to “support better pricing for competitions on PC”).

¹⁹⁶ See Best Buy Depo. at 95:24-96:9 (“So as stated earlier, there’s not even an official policy in regards to the 97 or 99 cent endings. It’s just something that has always been done that way. There is not a policy or general approach that really changes what’s on the other – the left-hand side of the decimal point. It’s really up to the merchant to price that the way that they want. It’s generally on the right-hand side of the decimal point where you see more consistency.”).

¹⁹⁷ See, e.g.,

- [REDACTED]
- Deposition of George Hussain Ali, Oct. 9, 2013 (“TigerDirect Depo.”) at 61:6 to 61:8 (“Q: So other than the .96, .97, .98 or .99, are there any other focal pricing? A: Unless it was a mistake, usually not.”);
- Deposition of Steven Stafford, Oct. 17, 2013 (“Amazon Depo.”) at 130:4-10 (“Q: And, so, there was no set two or three price points, for example, that Amazon limited itself to in pricing to its customers, right? . . . A: No.”); and
- Deposition of Tanya Manwiller, Feb. 7, 2014 (“Wal-Mart Depo.”) at 49:19-25 (“Q: When setting a price point for the Walmart retail stores, are there any particular numbers that -- in terms of numbers that end in 99 or 49, anything like that that Wal-Mart sets their retail prices for? A: It varies. We don’t have a price ending hard-and-fast rule on setting any of our retails at Wal-Mart.”).

which the model was sold at most frequently on its first day of sale was different from the price it most frequently sold at during its first month of sale. In addition, nearly 70 percent of sales in the first month were at prices other than the initial price point.

Table 11: Best Buy Adjusts Prices Frequently, Even in the First 30 Days of Sales, Desktops and Laptops

	# Models	Share	Percentage of models where the most frequently observed price over the first 30 days of sales differed from the introductory price	Percentage of sales made at prices other than the introductory price	Total number of distinct prices observed
Introductory price ending in 09	14	1%	21%	42%	489
Introductory price ending in 19	27	2%	44%	56%	607
Introductory price ending in 29	75	6%	61%	61%	965
Introductory price ending in 39	17	1%	71%	83%	666
Introductory price ending in 49	357	29%	59%	66%	1,780
Introductory price ending in 59	29	2%	79%	79%	824
Introductory price ending in 69	19	2%	53%	62%	682
Introductory price ending in 79	79	6%	58%	53%	997
Introductory price ending in 89	12	1%	67%	63%	471
Introductory price ending in 99	502	40%	54%	68%	1,928
Other prices	113	9%	81%	83%	1,316
Total number of models	1,244		59%	67%	10,725

Sources: BBODD0000002 - 11. See BestBuy_PricePoint_Summary.do.

Notes:

1. All prices in this analysis are based on the integer of the observed price, so, for example, the prices \$999.99 and \$999.98 are both treated as \$999.
2. Introductory price is the most frequently observed price on the first day a computer model is sold.

250. **Figure 17**, as an example, is taken from the May 10, 2015 Sunday Best Buy ad. The ad shows Best Buy promoting the sale of nine notebook computers and eight desktop computers. Of the 17 price points for computers shown, only 7 (41 percent) end in \$49 or \$99. Price points ending in \$19, \$29, \$39, \$59, \$79, and \$89 account for the majority of advertised prices. The amount of discount from “normal” computer pricing in this weekly promotion also ranges widely, from \$30 to \$130 dollars.

Figure 17: Best Buy Weekly Advertisement (Online) May 10, 2015 -- Prices Other Than 49 and 99 Price Points









WEEKLY AD TIME LEFT TO SAVE: 33 : 51 : 10 E Madison WI PAGE 4 OF 38 JUMP TO SECTION

COMPUTERS & TABLETS FILTER BY SORT BY

Only at Best Buy. Powered by Intel.
Best Buy® customers told us what they really wanted in a laptop. We teamed up with top brands to make it happen.

\$1,149.99
★★★★★
HP • Spectre x360
2-in-1 13.5" Touch-Screen Laptop • Intel

AN ENTIRE YEAR OF INTERNET SECURITY SOFTWARE IS INCLUDED TO KEEP YOUR BLUE LABEL LAPTOP PROTECTED
(a \$49.99 value)
AVAST! TREND MICRO WEBROOT

 Lenovo • Yoga 2 2-in-1 11.6" Touch-Screen Laptop • Intel Pentium • 4GB Memory \$429.99 SAVE \$50	STEP UP TO AN INTEL® CORE™ i3 PROCESSOR for \$100 more  Lenovo • Yoga 2 2-in-1 11.6" Touch-Screen Laptop • Intel Core i3 • 4GB Memory \$529.99 SAVE \$50
 Dell • Inspiron 15.6" Touch-Screen Laptop • Intel Core i7 • 8GB Memory • 1TB Hard Drive \$649.99 SAVE \$130	 HP • ENVY 2-in-1 15.6" Touch-Screen Laptop • Intel Core i7 • 12GB Memory \$799.99 SAVE \$130
 HP • 15.6" Laptop • Intel Core i5 • 6GB Memory • 750GB Hard Drive • Backlit Keyboard \$449.99	 1-YEAR OFFICE 365 PERSONAL HP • Pavilion x360 2-in-1 13.3" Touch-Screen Laptop • Intel Core i3 • 4GB Memory \$429.99 SAVE \$70
 Acer • 11.5" Chromebook • Intel Celeron • 2GB Memory • 16GB eMMC Flash Memory \$159.00 SAVE \$40	 AMD A6 Office 365 \$329.99 SAVE \$99.98 BUNDLE & SAVE Toshiba Satellite C55D-C55128 Touch-Screen Laptop, Internet Security




















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WEEKLY AD TIME LEFT TO SAVE: 33 : 49 : 30 E Madison WI PAGE 6 OF 38 JUMP TO SECTION

COMPUTERS & TABLETS FILTER BY SORT BY

<p>PROTECT YOUR PC'S Compatible with iMac®, MacBook Pro® and MacBook Air®, Upgrade to a full year of protection for only \$19.99!</p> 	 <p>\$489.98 Desktop only also available SAVE \$70</p> <p>HP Pavilion 840-434 Desktop & 21.5" IPS LED Monitor Package</p>	
  <p>Lenovo® Eraser X315 Desktop • AMD A10-Series • 12GB Memory • 2TB Hard Drive • ONLINE ONLY</p> <p>\$699.99 SAVE \$100</p>	  <p>\$579.98 Desktop only also available SAVE \$100</p> <p>HP Pavilion 500-424 Desktop & 23" IPS LED Monitor Package</p>	
  <p>NEW Dell® Inspiron 20" All-in-One • Intel® Pentium® • 4GB Memory • 1TB Hard Drive • Black</p> <p>\$439.99 SAVE \$30</p>	  <p>HP® Pavilion 23" Touch-Screen All-in-One • AMD A8-Series • 8GB Memory • Black</p> <p>\$679.99 SAVE \$100</p>	  <p>Asus® 21.5" Touch-Screen All-in-One Computer • 8GB Memory • 1TB Hard Drive • Black</p> <p>\$719.99 SAVE \$30</p>
  <p>NEW Lenovo® 23.5" Touch-Screen All-in-One • Intel® Core i5 • 8GB Memory • 1TB Hard Drive • Black</p> <p>\$799.99 Other model available SAVE \$100</p>	  <p>NEW Asus® 23" Touch-Screen All-in-One • Intel® Core i5 • 8GB Memory • 2TB Hard Drive • Black</p> <p>\$949.99 SAVE \$50</p>	 <p>HOT PRICE HP® 20" LED HD Monitor • Silver/Black</p> <p>\$89.99 SAVE \$10</p>
 <p>HP® Pavilion 21.5" IPS LED HD Monitor • Jet Black/Natural Silver</p> <p>\$119.99 SAVE \$30</p>	 <p>HP® Pavilion 23" IPS LED HD Monitor • Jet Black/Natural Silver</p> <p>\$129.99 SAVE \$50</p>	 <p>HP® Pavilion 25" IPS LED HD Monitor • Jet Black/Natural Silver</p> <p>\$179.99 SAVE \$50</p>
 <p>AOC® 27" Widescreen Flat-Panel LED HD Monitor • Black</p> <p>\$179.99 SAVE \$20</p>	<p>PRICE MATCH GUARANTEE We won't be beat on price.</p> <p>We'll match the product prices of key online and local competitors.</p>	

251. Nonetheless, it is true that these two price points are more frequently observed than other price points in the data for Best Buy (though not for others), and suggests that these price points (which may also reflect daily or weekly promotional price reductions from other initial price points) may be chosen by product line sales managers more frequently.

252. The most important point, however, is that features included in pre-configured computers to be sold at all price points, including the “49” and “99” price points, are negotiated between retailers and OEMs. Features are added to and removed from proposed models as suppliers are being pressured to reduce costs to meet price and cost targets for both retailers and OEMs. The documentary record in this case yields many examples of OEMs pressuring suppliers for small reductions in component prices, and small and large features of computers being altered in order to meet cost and pricing targets.¹⁹⁸ Data produced in this case show that OEMs had many ways of making small alterations in their computer configurations to reduce costs by small amounts, and conversely, that they had many ways in which they could add features to their computers to make them more attractive to consumers for only small increases in cost.

253.

See Exhibit 8. Any combination of these additional features would make the computer more attractive to some consumers.

254. Managers at retailer Circuit City have also described a process of consultation with the OEM manufacturing a computer, in which computer configurations would be tweaked to create the best, most attractive SKU that could be sold at a given price. At the end of the day, the highest quality computer configuration that could be made available at a given price point, in this very competitive industry, would be the one chosen and offered for sale:

Q: And I take it that, in fact, if Circuit City was offered a computer that had better features for the same price as a computer that had lesser features, Circuit City would want to buy the computer that had the better features if they were equal price; correct?

A: Yes.

Q: And why is that?

A: Because that product is going to sell better.

¹⁹⁸ See ODD-HP148173 (proposing different CPU speeds, RAM, various motherboards to “lower the BOM”); ODD-HP140820 (stating that HP “shelf line up is between \$5 and \$40 off in value against eMachines. For a number of those SKU’s, \$25 of the value disadvantage is due to our single format DVD RW.”).

Q: Why would a customer want to have better features for the same price as it could buy a computer with lesser features?

A: The customer is looking for the same value that the buyer is looking for. If the buyer sees a value, then the customer will see a value.”¹⁹⁹

255. A corporate representative for Ingram Micro confirmed the same essential facts – that the product specifications would be “baked in” to Ingram’s procurement cost to Ingram:

Q: I think you spoke to this earlier, but a product’s features or specifications would certainly have an impact or could certainly have an impact on the sales price of that product?

A: That might be a factor. Probably a lesser factor.

Q: So what the product actually was and could do would be a lesser factor?

A: I think more the other items we’ve discussed are more of the driving factors.

Q: Would it be a lesser factor because presumably the specifications of that product would be baked into the cost of that product to Ingram already?

A: I guess that could be assumed.²⁰⁰

256. And a representative of Acer testified that it sought to offer the highest quality computer configuration to customers:

Q: Did prices for computers decline from the period 2003 to 2008, in general?

A: Yes.

Q: And, in general, were computers increasing in quality every year during that same period?

A: Yes.

Q: So as prices have trended down, the quality of features in computers that Acer manufactured has increased?

A: Yes.

Q: Would you agree that laptops had fairly short lifecycles during the period 2003 through 2008?

¹⁹⁹ Deposition of Stephen M. Deason, December 7, 2016, 124:19-125:10 (objections omitted).

²⁰⁰ Deposition of Lanay Cerilli (Ingram), at 154:9-23.

A: No.

Q: Can you explain that to me?

A: The manufacturers would improve their quality every year.

Q: So a laptop that was manufactured at the beginning of 2004, for example, would no longer be competitive at the same price at the beginning of 2005; is that right?

A: That's essentially true.

Q: And was it Acer's corporate strategy to continuously improve the technological quality of their computers?

A: Yes.

Q: And Acer would try not to continue to use an obsolete technology when better technology became available at a better price?

A: That's basically true.

* * *

Q: Is the quality of components in a computer something that is important to consumers?

A: Theoretically, yes.

Q: Did Acer choose to make computers with certain retail price points in time?

A: Yes.

* * *

Q: But Acer could choose between the components that went into a computer to make sure that it met the price point that it intended; isn't that right?

A: Yes.

Q: And Acer could not put all top-quality components into every computer; right?

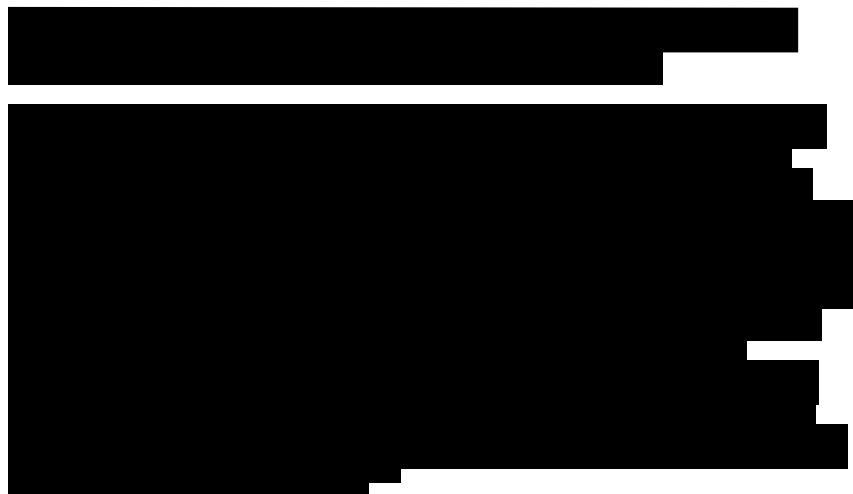
A: Correct.

Q: And Acer would not want to put all of the lowest-quality components into every computer; isn't that right?

A: Correct.²⁰¹

257.

²⁰¹ Dep. Tr. of Ellen Chen (Acer) at 121:21 to 125:8 (objections omitted).



3. The Computer Industry Is Extremely Competitive, with Material Inputs Declining Substantially in Cost During the Class Period

258. The computer industry is widely acknowledged to be extremely competitive.²⁰³ Computer OEMs earn razor thin profit margins typically on the order of 3 to 5 percent or less of

²⁰² Declaration of Masa Okumura, January 13, 2017. Excerpts from ¶¶7-14.

²⁰³ “This analysis [of a monopolistically competitive market] is well illustrated by the personal computer industry. Originally, such computer manufacturers as Apple and Compaq made big profits. But the personal computer industry turned out to have low barriers to entry, and numerous small firms entered the market. Today, there are dozens of firms, each with a small share of the computer market but no economic profits to show for its efforts.

The monopolistic competition model provides an important insight into American capitalism: the rate of profit will in the long run be zero in this kind of imperfectly competitive industry, as firms enter with new differentiated products.” P. Samuelson and W. Nordhaus, *Economics*, 19th Edition, 2010, pp. 239-240, available at https://books.google.com/books?id=gzqXdHXxeAC&pg=PA239&lpg=PA239&dq=%22monopolistic+competition%22+%22personal+computer+industry%22&source=bl&ots=y7o6yJy8IV&sig=NW_JhAxOTRbf_8UHwUB_GKrp40E&hl=en&sa=X&ei=TrZSVamuDNTjoASj_IGwDg&ved=0CD4Q6AEwBQ#v=onepage&q=%22monopolistic%20competition%22%20%22personal%20computer%20industry%22&f=false.

“The market availability of all components on the open market combined with the extreme ease of assembly make the PC a quintessentially modular product. This means that in nearly every stage of the value chain there is intense competition. Bresnahan and Richards described these dynamics as “vertical competition,” an environment in which firms at each stage of the value chain encourage competition at the other stages.’ So, for example, Microsoft certifies microprocessors made by firms other than Intel as Microsoft-compatible; Intel develops microprocessors to work with the Linux operating system. Price competition is continuous and fierce: even acquiring a dominant position cannot entirely protect a firm (with the possible exception of Microsoft).” M. Kenney and J. Curry, “The Internet and the Personal Computer Value Chain,” in BRIE-IGCC E-conomy Project, *Tracking a Transformation: e-Commerce and the Terms of Competition in Industries* (Washington, D.C.: Brookings Institution Press), chap. 7, 2001, p. 153.

“The PC industry has undergone a significant shift in structure since the mid-1990s, driven by industry-wide competitive pressures and by the ascendance of Dell Computer to the top of the industry. Facing shrinking margins and reacting to the inherent efficiencies of Dell’s direct-sales/build-to-order strategy, PC companies have revamped their supply and distribution chains to reduce costs and respond more quickly to demand signals.” J. Dedrick and K.L. Kraemer, “The Impacts of IT on Firm and Industry Structure: The Personal Computer Industry,” *California Management Review*, Vol. 47, No. 3, Spring 2005, p. 139.

“American firms like Dell, Gateway, and Compaq responded positively to the emergence of Intel’s new notebook PC platforms. Exploiting the increased modularity of the product, the firms quickly increased outsourcing to Taiwanese firms to reduce costs, while concentrating their efforts on product conception, marketing, and distribution. Taiwanese firms became adept at the recursive and relatively superficial work of product design. Rapid

sales price,²⁰⁴ i.e., \$5 to \$10 dollars **total** profit on a \$199 computer. One recent analysis estimated the weighted average profit per PC sold by the five largest PC makers over the 2007-13 period to have ranged from about \$10 to \$25 (**Figure 18**). The documentary record shows computer OEMs going to great lengths to reduce even the smallest of costs to maintain that slim profit.²⁰⁵

product life cycles and intense competition justified outsourcing the most detailed aspects of design and redesign to Taiwanese ODMs.” M. Kawakami, “Inter-firm Dynamics in Notebook PC Value Chains and the Rise of Taiwanese Original Design Manufacturing Firms,” in M. Kawakami and T. J. Sturgeon, Ed., *Inter-firm Dynamics in Notebook PC Value Chains and the Rise of Taiwanese Original Design Manufacturing Firms*, (London: Palgrave MacMillan), chap. 1, 2011, p. 26.

“Our main result is that a vintage-capital model that combines a competitive market structure with a rapid rate of innovation is well able to explain the observed paths of prices, as well as sales and consumer income, over a typical PC’s product cycle. The analysis implies that rapid price declines are not caused by upstream innovation alone, but rather by the combination of upstream innovation and a competitive environment.” A. Copeland and A. H. Shapiro, “Price Setting in an Innovative Market,” Federal Reserve Bank of New York, Staff Report 462, Revised March 2013, p. 1.

“These predictions highlight the central role of competition in driving price declines over the product cycle (alongside falling sales and purchasers’ average incomes). Given the endogeneity of adopting new technology, rapid innovation alone is not sufficient to generate the rapid declines in prices over the product cycle. Rather, the combination of a competitive market structure and a rapid rate of innovation is the main driver of computer prices and sales over the product cycle.” Adam Copeland & Adam Hale Shapiro, 2016. *Price Setting and Rapid Technology Adoption: The Case of the PC Industry*, The Review of Economics and Statistics, vol. 98(3) 615, (MIT Press July 2016).

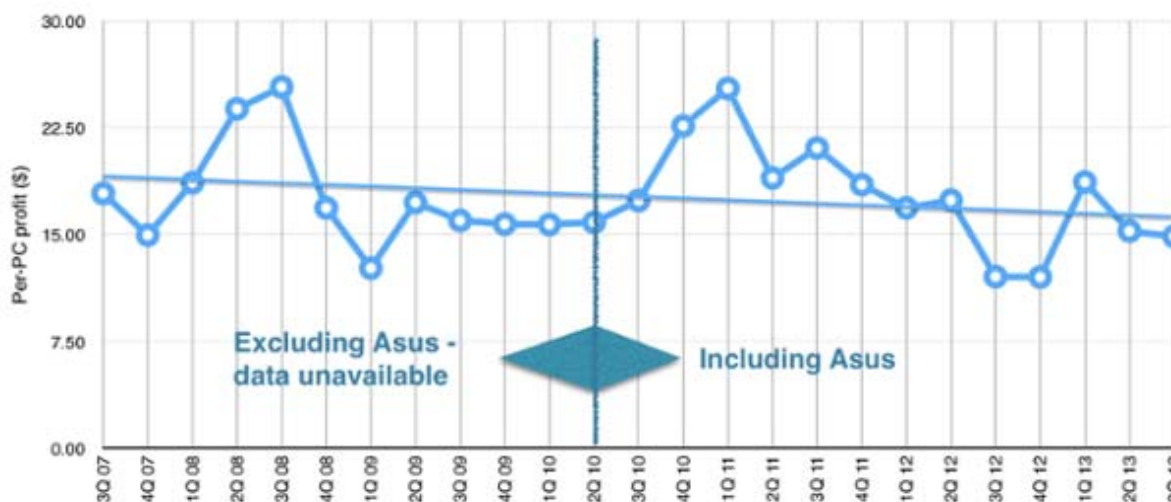
Retailers in this litigation have also confirmed the highly competitive nature of sales for PCs:

- Newegg Depo. at 47:22-48:4 ([REDACTED]);
- Deposition of Brian Clark, Feb. 7, 2014 (“ASI Depo.”) at 78:14-19 (“But, yeah, I mean, it’s always a competitive environment. Everybody’s striving to be number one in -- in volume, and everyone is -- is striving to -- to ship out as much product as they can. We’re competing with the big corporations, you know, and -- absolutely.”);
- TigerDirect Depo. at 85:9-14 (“Q: Can you remember any particular times during the relevant time period where TigerDirect felt increased pressure to keep prices low as a result of the economic or competitive landscape? . . . A: All the time.”);
- Deposition of Rajesh Seth, Dec. 10, 2013 (“Fry’s Depo.”) at 41:18 to 41:25 (“Q: Do you agree the consumer electronics industry is a competitive market? . . . A: It is.”); and
- Best Buy Depo. at 146:1-9 (“Q: Would you say as a general matter that the competition has become more -- became more intense in this space over the course of the relevant time period? . . . A: I wouldn’t classify it that way. I think the intensity level has always been there. It’s just you’re having competition with different people.”);

²⁰⁴ Dells average net profit over the 2006 to 2010 period was about 4.5 percent of sales, including its higher margin non-PC lines of business. Y. Kuang, “Financial Analysis of Dell and HP,” *available at* <http://www2.uh.edu/kuangy/acct6351/Sample%20Projects/sample%20project%20with%20pro%20forma%20%20a%20%20analysis.pdf>; *see also* <http://images.hoovers.com/images/i/samples/Dellreport.pdf>.

²⁰⁵ *See, e.g.,*

[REDACTED]

Figure 18: Average Per-PC Profit for Five Largest PC Manufacturers

Source: <http://www.theguardian.com/technology/2014/jan/09/pc-value-trap-windows-chrome-hp-dell-lenovo-asus-acer>

259. Furthermore, prices in the computer industry were declining throughout the class period annual rates in the range of 20 to 30 percent. Testimony in this litigation from industry participants confirms that computer prices declined steadily over the class period.²⁰⁶

²⁰⁶ See, e.g.,

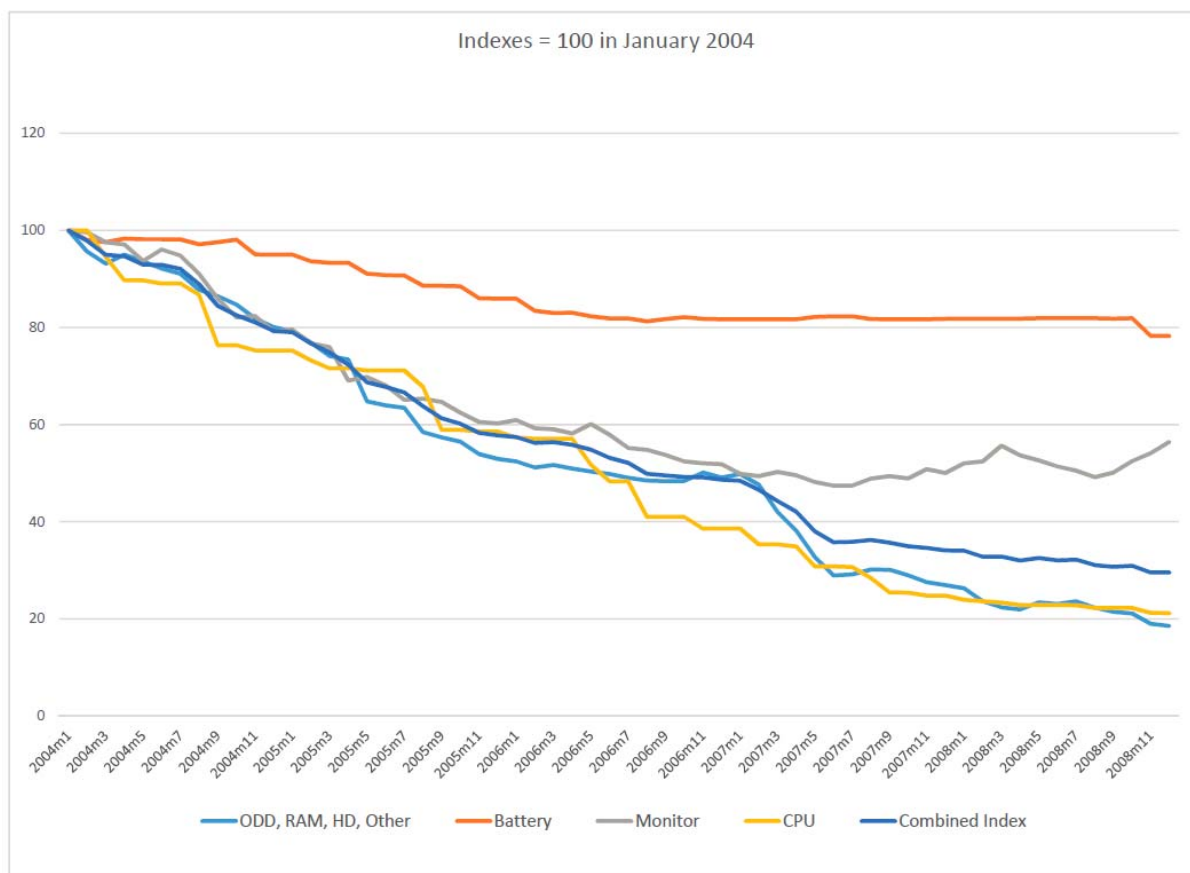
- Newegg Depo. at 94:22-95:13 [REDACTED]
- ASI Depo. at 78:21-25 (“Q: And, Mr. Clark, is it your experience from 2008 to -- to 2009 that the prices of optical disk drives that ASI purchased declined during -- declined during that period? A: Yes.”);
- Amazon Depo. at 106:17-25 (“Q: And for laptop and desktop computers, were those prices generally declining during the relevant time period, to your knowledge? A: To my knowledge, yes. Q: And is the same true for optical disk drives, standalone? Were the prices for those declining during the relevant time period? A: That would -- They were stable to declining, yes. I do not know of a cost increase.”);

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In Re Optical Disk Drive Antitrust Litig., Case No. 10-md-2143

260. An exemplary analysis of the cost trends of major component parts used in personal computers confirms this testimony. **Figure 19**, using data provided in this case, depicts the decline in prices for laptop PC inputs from 2004 to 2008. I estimate that on average, the cost of components used in manufacturing a laptop computer declined by roughly 22 percent a year over the class period.

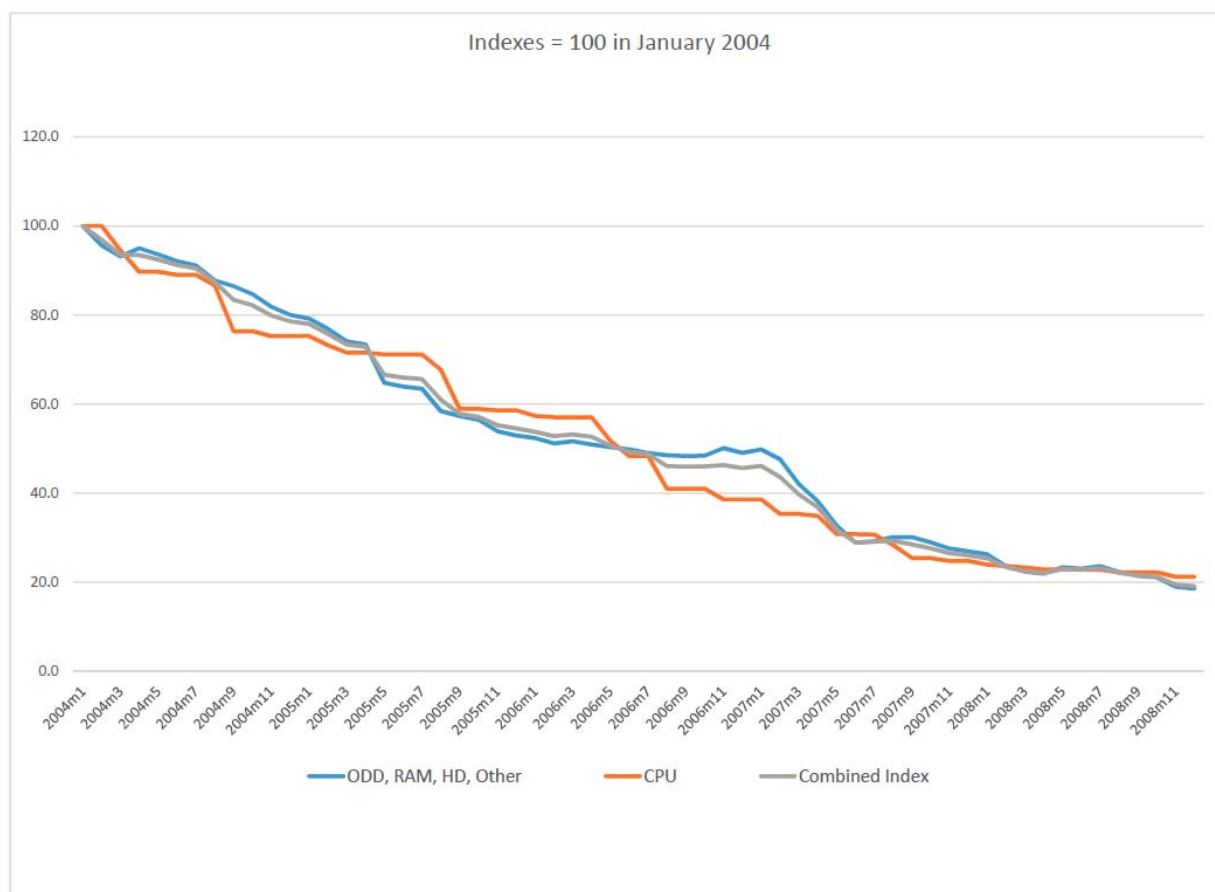
Figure 19: Quality Adjusted Costs for Laptop Inputs Declined Substantially from 2004 to 2008



261. **Figure 20** demonstrates that input prices for desktops from 2004 to 2008 were similarly declining. These data show that the costs of desktop computers declined at an annual rate of roughly 28 percent over the class period.

- Fry's Depo. at 62:21-25 ("Q: And would you agree that the prices of optical disk drives and optical disk drive products have generally declined from 2002 through 2010? . . . A: I believe so, yes.")
- Wal-Mart Depo. at 41:22-42:1 ("Q: Let me talk through those price changes. During the time that you were the senior buyer, was this a period of time in which computers and desktops were generally declining in price? A: Yes."); and
- Best Buy Depo. at 88:15-20 ("In general in the technology industry there's a commoditization cycle that occurs where a product, whatever it is, has a price point, and that price point becomes more and more affordable over time until it reaches a particular point and then it tends to stabilize.").

Figure 20: Quality Adjusted Costs for Desktop Inputs Declined Substantially from 2004 to 2008



262. **Table 12** summarizes the same declining cost trends for various computer inputs using data gathered by various government agencies.

Table 12: Average annual changes in Producer Price Indexes for inputs to computer manufacturing, 2003-2009

Bank of Korea	<u>Average Annual Price Changes</u>
7.1.3 Item Group: Hard Disk Drives ¹	-17.0%
7.1.1 Basic Group: LCD flat-panel display ²	-14.9%
7.1.1 Basic Group: Computer memory storage ²	-19.5%
US Bureau of Labor Statistics	
PCU33441333441312: Microprocessors (including microcontrollers) ³	-30.1%
Bank of Japan	
PR'PRCG10_2600850047: Computer monitors ⁴	-10.8%
Notes/Sources:	
1. Bank of Korea Economic Statistics System: http://ecos.bok.or.kr/flex/EasySearch_e.jsp , accessed August 10, 2010.	
2. Bank of Korea Economic Statistics System: http://ecos.bok.or.kr/flex/EasySearch_e.jsp , accessed January 23, 2014.	
3. BLS: http://data.bls.gov/pdq/SurveyOutputServlet , accessed January 23, 2014.	
4. Bank of Japan Statistics: http://www.stat-search.boj.or.jp/ssi/cgi-bin/famecgi2?cgi=\$nme_a000_en&lstSelection=8 , accessed January 23, 2014.	
5. Korea and Japan indexes are converted to US Dollars. https://fred.stlouisfed.org .	

263. **Table 13** further quantifies cost reductions during the conspiracy period. It shows that a laptop computer containing on average \$1171 in materials in the first quarter of 2004 would have seen those materials costs drop by an average of \$42 per quarter through 2008, while a desktop containing \$847 in materials in the first quarter of 2004 would have seen those components drop by an average of \$35 per quarter through 2008.

Table 13: Quality Adjusted Input Costs Declined at Substantial Rates

Year	Qtr	Laptop cost index				Desktop cost index			
		Cost index ¹	% Change ²	Notional costs for Toshiba's key inputs ³	Cost decline ⁴	Cost index ⁵	% Change ²	Notional costs for desktop inputs ³	Cost decline ⁴
2004	1	100.0				100.0			
2004	2	97.8	-2.2%		-\$25.60	97.5	-2.5%		-\$21.32
2004	3	88.9	-9.1%		-\$104.08	89.1	-8.6%		-\$70.83
2004	4	83.5	-6.1%		-\$63.90	84.0	-5.7%		-\$43.29
2005	1	78.8	-5.6%		-\$54.66	78.4	-6.7%		-\$47.40
2005	2	71.4	-9.4%		-\$87.09	70.5	-10.1%		-\$67.08
2005	3	64.5	-9.6%		-\$80.12	61.8	-12.4%		-\$73.82
2005	4	60.8	-5.7%		-\$43.41	58.3	-5.7%		-\$29.60
2006	1	59.4	-2.3%		-\$16.61	56.9	-2.5%		-\$12.28
2006	2	56.0	-5.8%		-\$40.01	52.7	-7.3%		-\$35.04
2006	3	52.1	-6.8%		-\$44.84	49.1	-6.8%		-\$30.22
2006	4	51.2	-1.8%		-\$10.99	48.8	-0.8%		-\$3.15
2007	1	46.6	-9.0%		-\$54.23	42.5	-13.0%		-\$53.57
2007	2	37.7	-19.1%		-\$104.35	31.0	-27.0%		-\$97.13
2007	3	37.6	-0.3%		-\$1.28	30.5	-1.7%		-\$4.51
2007	4	35.9	-4.4%		-\$19.47	27.8	-8.6%		-\$22.15
2008	1	34.5	-3.8%		-\$15.79	24.0	-13.7%		-\$32.44
2008	2	33.8	-2.3%		-\$9.14	24.4	1.5%		\$2.98
2008	3	32.3	-4.3%		-\$16.83	23.0	-5.6%		-\$11.56
2008	4	31.2	-3.6%		-\$13.60	20.5	-11.0%		-\$21.47
			Cost index growth rate		Average cost decline		Cost index growth rate		Average cost decline
Quarter			-6.0%		-\$42.42		-8.0%		-\$35.47
Annual			-21.8%		-\$169.68		-28.4%		-\$141.87

Sources: DELL_ODDSALES_00047-214; T-ODD-00000545PT; PPI for PCU33441333441312 (CPU), BLS.gov; PPI for LCD (BOJ), <http://www.stat-search.boj.or.jp>; Japan/US Foreign Exchange Rate, <http://research.stlouisfed.org/fred2>.

Notes:

1. The cost index for laptops is based on Dell's input costs for hard drives, RAM, ODD, video boards, network cards, and batteries. Indexes for these inputs are combined with the BLS PPI for CPUs and the BOJ PPI for LCD screens. The weights used to combine indexes are based on the period-specific average costs of the inputs from Dell, or, for the CPU cost share, Toshiba.
2. (Current period cost index/last period cost index) - 1.
3. For laptops, the cost in the first quarter of 2007 is the average cost of key inputs plus the average cost of batteries for example products provided by Toshiba for 2007. Key inputs are CPU, hard drives, RAM, ODD, and monitors. The costs for desktops is the same except that the monitor and battery costs are excluded.
4. Cost of key inputs in the current period - cost of key inputs in the preceding period.
5. The cost index for desktops is based on Dell's input costs for hard drives, RAM, ODD, video boards, and network cards. The index for these inputs is combined with the BLS PPI for CPUs. The weights used to combine the indexes are based on the the CPU cost share for Toshiba.

264. The intense competition in the personal computer industry during the cartel period continuously drove prices down. The declines were driven by declining costs for the continuously improving components going into computers,²⁰⁷ and savage competition among

²⁰⁷ For example, two coauthors and I showed that quality-adjusted price declines in semiconductor components were responsible for between 40 to 60 percent of the decline in personal computer prices occurring in 1999. See A. Aizcorbe, K. Flamm, and A. Kurshid, "The Role of Semiconductor Inputs in IT Hardware Price Decline: Computers versus Communications," in E. R. Berndt and C. R. Hulten, Ed., *Hard-to-Measure Goods and Services: Essays in*

firms vying with one another over market share. The net effect was that fiercely competitive computer OEMs constantly slashed the prices paid by buyers, by cutting prices on existing models and improving features offered in new models. Notably, these new models were slotted into the same price points at which less capable computers previously were sold.²⁰⁸

265. Intense competition in the PC marketplace meant that both OEM computer makers and retailers were trying to pack as many desirable features as possible into a PC designed to be sold at a particular retail price point. Given that a retailer had a strategy of introducing new products at particular price points, and that the retailer and PC OEM agreed on a particular price point target, the consequence in the *but-for* world of a decline in the price of a major component, like an ODD, would be that additional features could be added to the PC in order to make the product as attractive as possible in competition with other brands and retailers. Absent a small overcharge in the *but-for* world, small improvements would be possible; absent a large overcharge in the *but-for* world, major improvements in PC characteristics would be possible.

266. These improvements would have been observed absent the alleged ODD price-fixing. As previously noted, the decline in cost in the “but-for” world for the observed computer configuration shipped in the actual, cartelized world, understates the true cost to consumers of not having improved, better quality computers available at the actual prices they paid for lower quality computers.

4. The ODD Is Considered a “Key Component” for the Purposes of Costs and Cost Savings by Industry Participants

267. As a factual matter, the fraction of ODD cost to sale prices is quite large for certain ODDs and time periods. In general, as shown in the **Table 12**, the cost of the ODD input is similar in magnitude to the costs of other important computer hardware inputs.²⁰⁹

Honor of Zvi Griliches, (Chicago: National Bureau of Economic Research and University of Chicago Press), 2007, p. 369, available at <http://www.nber.org/books/bern07-1>.

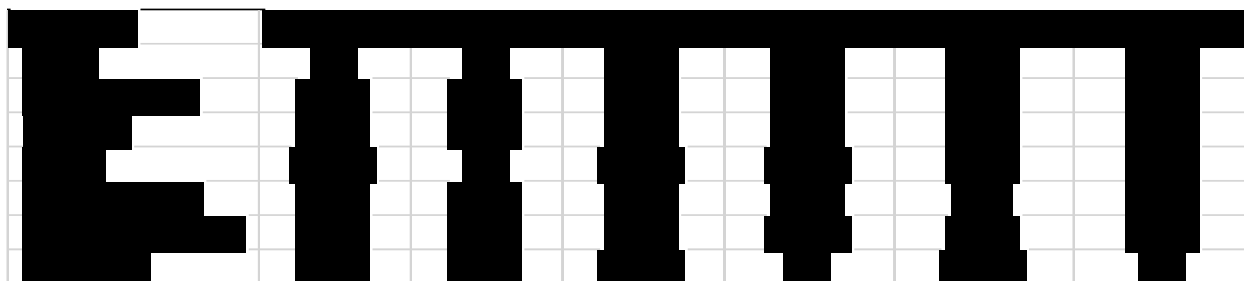
²⁰⁸ Defendants’ pass-through expert, Dr. Burtis, acknowledged this component cost trend and quality improvement in deposition:

Q. So for the components you worked on in other cases, was the general average trend for those components to be decreasing over time in price?

[Objection omitted]

A. What I recall about those components is – is kind of the pattern that I was describing to you. Which is for a given component it would be introduced at a certain price, and then over the life of that – that component, or that particular model or generation, its price would fall over time. But the new one that comes out, that’s better, faster, or bigger or whatever, can sometimes be introduced at a higher price. Sometimes these are introduced at even lower prices than – than the prior generation. So, you know, if you looked at, I think, all of those over time on average, you would probably find an average declining trend, simply because, you know, each one is introduced and then falls. That’s – that’s as good of a description as I can give you. (Burtis Depo. I, pp. 165-167.)

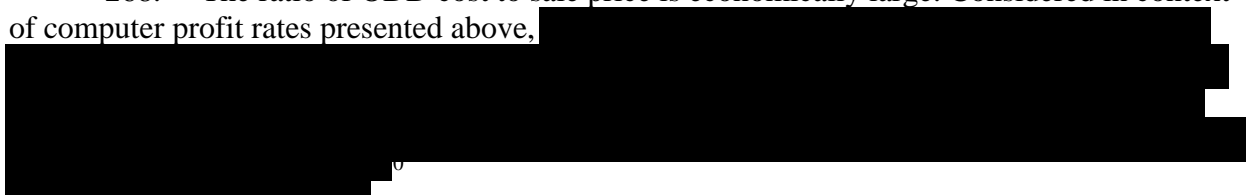
²⁰⁹ See MatchedModelIndexes_means-Merits.do.

Table 14: Average Costs for Important Components Going into Dell Computer Systems


Sources: Dell DELL_ODDSALES_00033-00045, DELL_ODDSALES_00047-214.

MatchedModelIndexes_means-Merits.do. N/A implies the item is not a system option or its cost was tracked under a different Class 2C Description value. CPU costs typically were not tracked independently.

268. The ratio of ODD cost to sale price is economically large. Considered in context of computer profit rates presented above,



269. ODDs were one of just a handful of computer components regarded by OEMs as “major” or “key” components.” For example, Toshiba (both a defendant and a manufacturer of laptops) has produced component-level data in this litigation. It refers to only five components as “key parts”—the RAM (random access memory modules), the hard drive, the LCD (liquid crystal display) screen, the CPU (central processing unit) and the ODD itself.²¹¹

270.

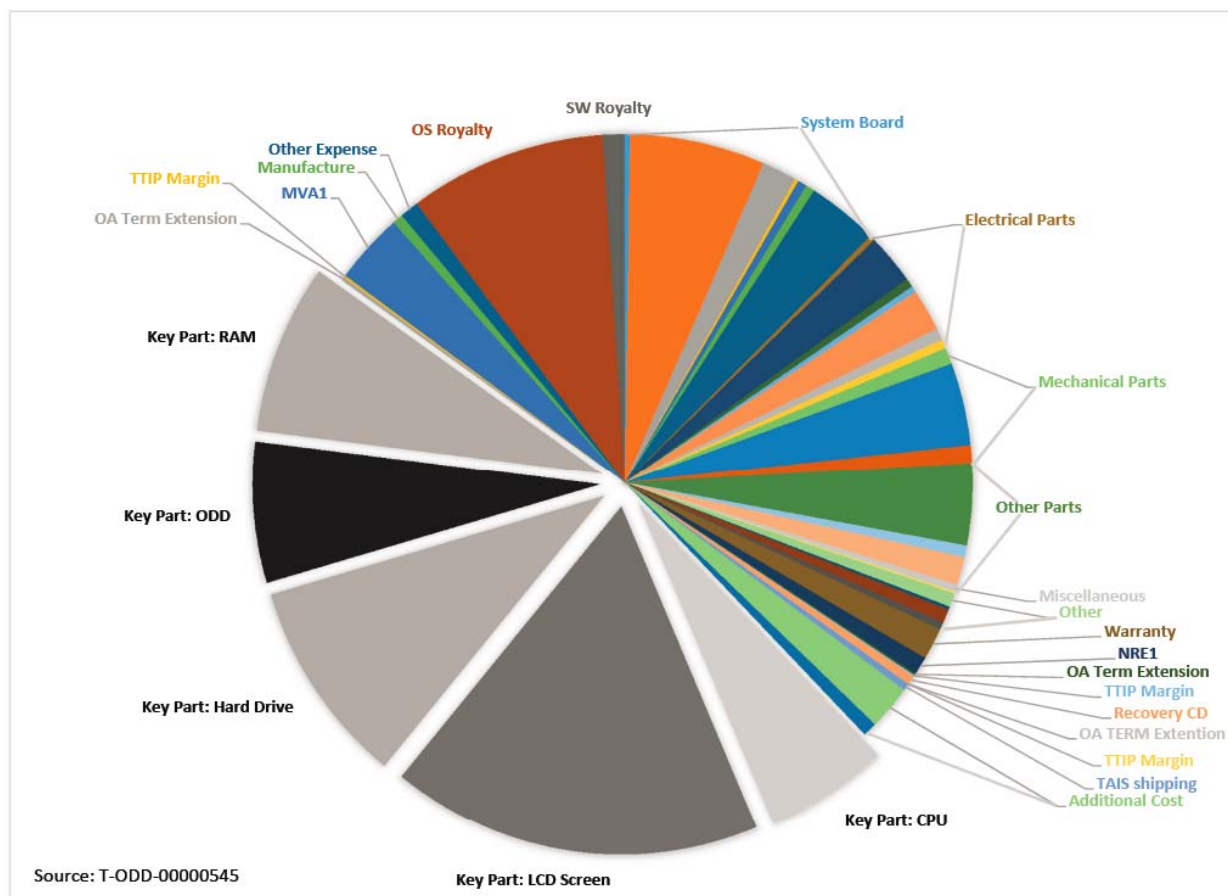


²¹⁰ Y. Kuang, “Financial Analysis of Dell and HP,” available at <http://www2.uh.edu/kuangy/acct6351/Sample%20Projects/sample%20project%20with%20pro%20forma%20%20analysis.pdf>; see also <http://images.hoovers.com/images/i/samples/Dellreport.pdf>, ODDCIV-003994125, HLDS_CIV00000855, HLDS_CIV00001827.

²¹¹ See T-ODD-00000545_TSB PC TOV calculation_2006-2010.xlsx.

²¹² *Id.*

Figure 21: The ODD Is a “Key Part” Representing a Large Share of Computer Costs (Toshiba Model PSAD0U-0N500N)

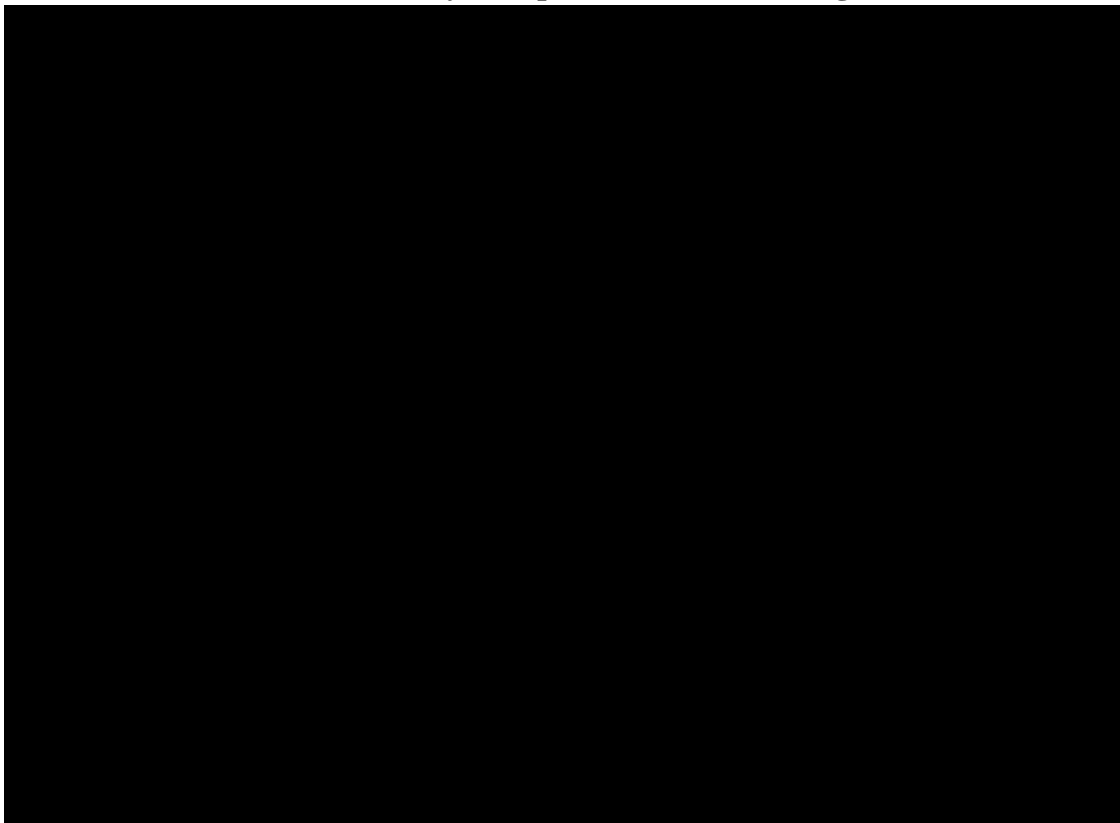


271. **Exhibit 9** makes the same point for other models of computers produced by Toshiba in 2007 – that is, the ODD accounts for a substantial portion of the cost of a computer.

272. Toshiba’s characterization of the ODD as a “key component” is confirmed in Dell’s internal documents. For example, **Figure 22** comes from an internal Dell document where it sought to identify possible cost savings, it identified several critical large components, including the ODD.²¹³

²¹³ See DELL-ODD-00199853.

Figure 22: Dell Internal Document Reflecting that ODD Is a Critical Commodity/Component for Cost Savings



273. The ODD and other key components were under constant cost cutting pressure by computer OEMs, who pushed their suppliers for even small price reductions so that the OEMs could reach the cost targets needed to supply the retailers' new model configurations.²¹⁴

274. That the ODD was considered such a critical cost component provides context for the focus and success of this cartel. It would make much less economic sense for a group of firms to form a cartel, and risk the potential costs if discovered, to elevate price for one of the

²¹⁴ See, e.g.,

- HLDS_CIV00000160 at 162 ("A meeting with Ricky [Dell] on this matter is scheduled to be held early next week and it seems that ***a price adjustment of a few cents are necessary***. -Overall, the companies are moving to minimize price reduction. Through this IN, we are trying to make Dell realize there is almost no room for cost reductions left anymore. However, it is expected that Dell's cost pressure will increase in regards to this matter.") (emphasis added);
- ODD-HP026715 at 26716 (HP to TSST/Samsung: "As we discussed, Marketing has to confirm the decision for Combo or CDRW but I am surprised to see you said your price is \$25.90 not \$25.50 as we spoke. Again, for Samsung to get the deal of Combo volume of 160K, it has to be \$25.50 or better.""); and
- ODD-HP269714 at 269716 ("Andrew (HP) reported a very successful eAuction for slim DVDRW with 7.6% saving for the month of Sept. (normal erosion is 3~4%). Adder has dropped from \$3.5 to \$1.75 in the adder auction. Target is to push that down to \$1.50.").

smaller and less important components of the computer (of which there are over 60 contained in Toshiba's computers, *see* **Exhibit 8**).

C. Extended Discussion of Methodology

275. In this section I provide a detailed presentation of my pass-through model and results. In the process, I address the most relevant issues previously raised by defendants' expert in the course of this litigation.

1. Measurement Error in Prices and Costs in the ODD Product Market Makes My Pass-Through Estimates Conservative

276. In a previous report, in the context of discussing reseller pricing strategies, defendants' expert wrote, "This means that Dr. Flamm's regressions are based on inaccurate measures of prices and costs and the results do not reliably represent the relationship between the prices and costs of ODD Products."²¹⁵ From a statistical standpoint, this observation has little bite. Mismeasurement of variables (or measurement error) is a basic topic covered by introductory econometrics textbooks with well-known implications. For instance, it is well known that prices affected by classical measurement error would not be expected to lead to bias in the estimated relationship between prices and costs in my models.²¹⁶

277. Prices that are not perfectly observed can still be used in regression analysis without the expectation that the results will be unreliable. Moreover, price rebates, discounts, and other promotions affecting sale prices would have occurred in the *but-for* world as well but would have been taken from a lower *but-for* sales price base.²¹⁷ Thus, there is no obvious statistical reason that the price variation observed in the data I use to measure the pass-through rate makes my estimates unreliable.

278. Costs affected by classical measurement error would lead to a biased estimate of the relationship between cost and price, but in this case the direction of the bias is expected to be downward. That is, the pass-through estimates I have reported are likely to be too small because they underestimate true pass-through rates.

279. In fact, it is straightforward to see how small measurement errors in cost, as are implied by Best Buy's testimony about its pricing policies, could produce biased estimates of pass-through. Best Buy executives have testified that individual product line managers set prices for the entire Best Buy retail store system centrally, and are responsible for negotiating pricing and price protection adjustments with suppliers as part of their price-setting function. Best Buy testified that managers are setting prices to maximize profit on the overall lines of business for which they have responsibility. If, for example, managers see price declines at competitive retailers (Best Buy testified that it constantly monitored competitor prices), managers could

²¹⁵ Declaration of Dr. Michelle M. Burtis in Support of Defendants' Opposition to Revised Motion for Class Certification on Behalf of Indirect Purchaser Class, August 14, 2015 (Burtis II), ¶ 25.

²¹⁶ Kennedy, P. 1992. *A Guide to Econometrics*, Third Edition: "Errors in measuring the dependent variables are incorporated in the disturbance term; their existence causes no problems" (p. 137).

²¹⁷ For additional discussion, see Flamm II, ¶¶ 192-94.

attempt to negotiate a price adjustment from the OEM PC supplier. The price adjustment might take the form of a price protection credit memo (which likely would not be reflected in the current cost in the Best Buy accounting system), or it might take the form of a reduction in Best Buy's future procurement cost, in which case it would eventually show up on the cost side of the P&L for the manager's line of business.

280. But it is clear from Best Buy's description that while the product line manager controls price in the Best Buy system, the cost Best Buy has provided in its data is a cumulative shipped product cost recorded on its purchase ledgers. While the cost would be visible to product line managers, it would not be under their direct control. A Best Buy product line manager might wait until the cost is updated in the cost accounting system, then punch the new price into the system. Or the Best Buy product line manager might proactively load the new price into the system before the new cost hits the books, and rely on a retroactive price protection credit memo to recoup credits for the new and lower cost as the lower price stimulates sales. The key point is that there is no guarantee that the new cost that accompanied the price reduction is going to appear in the Best Buy accounting system on the exact same day the new price appears—it can be after, if a price protection memo credit is to be used to retroactively repair profitability at the new and lower price, or before, if the manager waits until the new cost is loaded before changing the price.

281. One implication of this is that if the new cost leads or lags the new price by days (or possibly even weeks), estimating pass-through using daily transactional data will seriously bias any estimate of pass-through. If so, averaging data may help reduce the bias associated with cost measurement error. By averaging over the course of a week or month, the variation in the data due to measurement error is reduced relative to the measured values of price and cost. The result of this is to mitigate the downward bias caused by the measurement error.²¹⁸ Time averaging has been used in the economics literature in other contexts to reduce the bias caused by measurement errors.²¹⁹ The results of a simulation experiment, shown in **Exhibit 10**, provide a simple example.²²⁰

282. In this experiment I generated simulated, randomly drawn prices based on real Best Buy transactional cost data for computers, with costs passed through into the transactional price at precisely a 100% pass-through rate for all models of computer, by construction. I then

²¹⁸ Other forms of measurement error in cost may not be addressed by averaging. These could be due to price protection credits, rebates, market development funds, and other margin enhancements not being recorded on product-level accounting ledgers.

²¹⁹ As a mathematical matter, a linear regression model that applies to a set of individual transactions is also entirely correct when applied to averages (means) of variables for groups of transactions, and the same underlying parameter values can be estimated from appropriately defined averages. That is, if the linear relationship

$$(1) P_i = a + bX_i + e_i,$$

holds true for any transaction i in some set of transactions, then it is also true that the relation

$$(2) P_m = a + bX_m + e_m$$

holds with m replacing i , to denote a mean for the respective variable within a group of transactions within this set, rather than an individual transaction. This relationship must also hold true, and can be used to estimate exactly the same parameters.

²²⁰ I first presented this simulation in a previous report: Flamm II, ¶¶ 36-37, Ex. 3.

added a mean zero random measurement error to the real cost data, and proceeded to estimate a pooled pass-through rate for these computer models using the noisy cost data, using the same basic pass-through model I use for Best Buy.²²¹ I did this 1000 times, and averaged over those 1000 replications, the mean pass-through I estimated was about 3 percent! I then averaged the data by month, and re-estimated the pass-through equation using the somewhat less noisy monthly averages, and this time 1000 replications gave me a mean pass-through rate approaching 50%. As theory predicts, the noise in cost will still create a significant downward bias, but this is vastly less biased than a relationship estimated using the transactional data. As I show in in **Exhibit 10**, the pooled estimator I used successfully estimates the correct, 100% pass-through rate when applied to cost data that has not been corrupted by noise.

283. In summary, the fact that prices and costs observed in the pass-through data may be “inaccurate” do not imply results are unreliable. The practical implication of the observation is that I likely underestimate damages to IPPs.

2. Identification of the pass-through rate requires sufficient cost variation

284. In this subsection I examine the problem of sufficient cost variation.²²² The data used to measure pass-through come from the accounting records of various OEMs, distributors, and retailers. Consider the following supply channel:

ODD manufacturer → OEM → Retailer → Consumer.

285. Prices in the data for a retailer such as Best Buy will be the price paid by a consumer at the cash register. However, costs typically reflect acquisition costs from purchase orders issued by sellers sometime in the past. In the case of Best Buy, the cost will reflect the unit cost it paid to an OEM when it last ordered that computer model. Costs recorded in accounting records change only when they are updated with additional purchase orders issued under a new pricing agreement.²²³ In many cases, sellers purchase models only once, resulting in a substantial share of models with costs that do not change over time.²²⁴

286. The share of models with no cost variation reflects the rapid changes taking place in the market. This is especially evident in brick and mortar stores, where product changeovers had to occur frequently for stores to remain relevant to consumers who could purchase relatively advanced computer models online. A Best Buy witness, for example, explained that product lineups changed four times every year.²²⁵ In this context, Best Buy would typically make a single

²²¹ For simplicity, the time dummy variable was excluded.

²²² I have discussed these issues in previous reports. For example, Flamm II, ¶¶ 168-171.

²²³ For example, see Graph 9.1 (in Burtis I, p. 68), which reflects the two costs listed in Best Buy’s purchase orders for that product (see BBODD0000001_Confidential - Restricted_PO.txt.)

²²⁴ See Exhibit 33.

²²⁵ Deposition of Jason Bonfig, Best Buy, at 48:2-49:2. Another witness confirmed this frequency for Circuit City:

Q Okay. And you had indicated the lifecycle of the product, I believe, for computers, your understanding was there would be a new lifecycle at least three to five times a year; is that correct?

A I don't know the exact amount. But yes, three to five sounds more than reasonable.

Similarly for CompUSA, 75 percent of sales were made within 100 days. Product cycles were short for this market as purchasing agents planned their new product lineup, purchased units, and moved on to the next product cycle.

287. This cycle also has been documented in the academic literature. Economists at the Federal Reserve Bank of New York evaluated the sales of a set of pre-configured computer models using checkout scanner data for 2001 through 2009 from a sample of retail outlets located across the U.S. The authors observe that “Generally computer manufacturers sell half of their units by the second month on the market. By month 4, they typically sell 90% of their product.”²²⁹

288. **Figure 23** is from this same Federal Reserve study.²³⁰ It shows prices for different models of 15-inch laptop computers made by Hewlett Packard, Sony, Toshiba, and Apple, over their relatively brief product cycles.

Q Okay. And so, when we're talking about, again, just generally, three to five times a year, that's talking about an introduction of a new version of computer models that had not been carried before. It would be new SKUs, new and different features, potentially; correct?

A Yes. (Circuit City Deposition, December 7, 2016, at 114:11-23.)

²²⁶ Deposition of Jason Bonfig, Best Buy, at 120:14-121:4; 123:22-124:15.

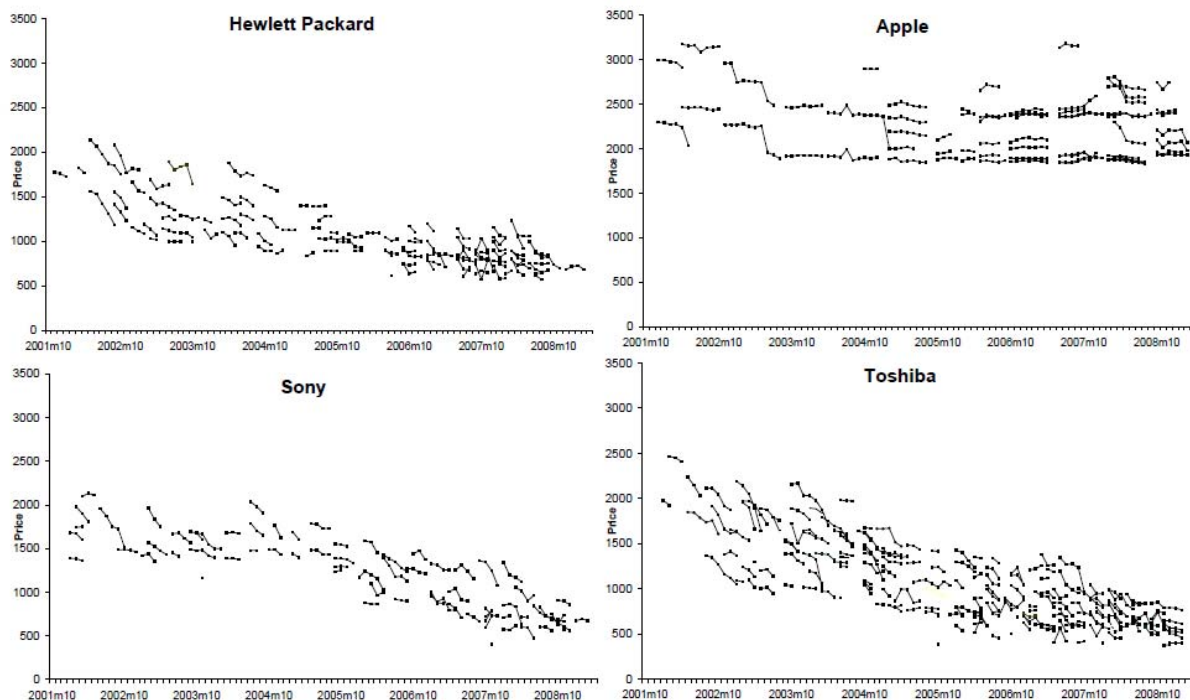
²²⁷ See 1.Best_Buy_CV.do.

²²⁸ See 1.CompUSA_CV.do.

²²⁹ Adam Copeland & Adam Hale Shapiro, 2016. "Price Setting and Rapid Technology Adoption: The Case of the PC Industry," *The Review of Economics and Statistics*, MIT Press, vol. 98(3), July, p.606.

²³⁰ *Ibid.*, Figure 1, p.604.

Figure 23: Federal Reserve Bank of New York Analysis Showing Short Product Cycles for Laptops



289. Each line segment in **Figure 23** represents a computer model becoming available for purchase before quickly being discontinued. Even over these very short product cycles, prices for existing models come down significantly: “PC prices fall quite rapidly over the product cycle. By the end of the cycle, they fall anywhere from 4% (Emachines) to 12% (Toshiba).”²³¹

290. The short life-cycles of individual computer models shown in **Figure 23** and described by retailers shed light on why we do not observe substantial variation in accounting costs. Because of short product lives, many retailers and distributors typically purchase a product only once before replacing it with a new product. Consequently, retailers and other vendors record cost once when the product is first purchased. After that, accounted costs show no variation.

291. Note however, the fact that a product’s cost does not change in a retailer’s accounting system does not mean that the product cost does not continue to decline and affect price after a retailer or distributor first stocks that initial batch of product. Many retailers and distributors testified that they continuously monitor prices charged by their competitors, and continuously change their prices to meet that competition. One of the key factors leading a vendor to cut its prices is the decline in product costs over product life cycles that are received when competitors purchase or restock the product at a lower cost, then pass that through to their prices. Retailer testimony in this case describes this process: “Yes, because we still own it. We

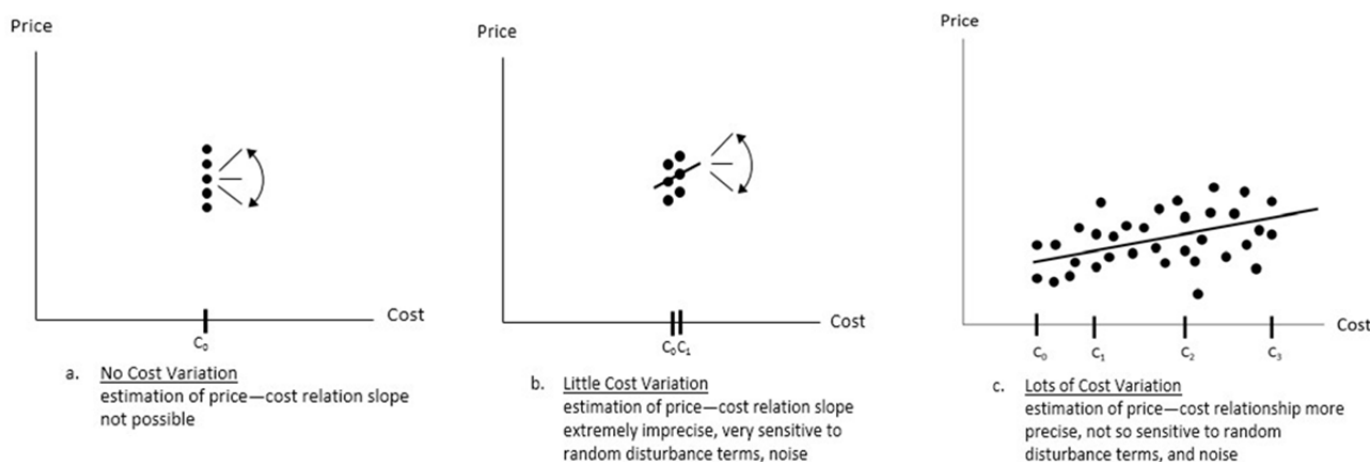
²³¹ *Ibid.*, pp. 604-605.

haven't sold it. And so it's –it's a–it's a way of saying–**the vendor is agreeing that, because they have changed the marketplace–because if they've lowered the cost, then our competitors are going to lower their retails. So, we're going to have to lower our retails.**”²³²

292. Thus, pass-through of declining costs continues through the market mechanism of meeting declining competitor prices, evident in **Figure 23**. This effect of cost on price is registered in a regression model as the impact of a market-wide decline in prices, and not as a decline associated with the cost paid in acquisition of additional stocks of the product. In short, declining (or increasing) costs continue to drive prices at all retailers and distributors throughout the product cycle, but are only specifically attributable to cost in a regression model when a retailer or distributor purchases additional volumes of products.²³³

293. The rapid changes taking place in this market during the price-fixing period have implications for the types of pass-through analysis that can be conducted. Pass-through rates cannot be identified without cost variation. This is illustrated in **Figure 24.a**, which depicts a product with only a single level of cost and price set equal to the cost plus a random disturbance term. With this combination of prices and costs, it is impossible to fit a straight line whose slope determines the systematic effect of cost on price as cost is changed, since cost is simply not changed in the sample.

Figure 24: Pass Through Estimation Requires Cost Variation



294. For some other products, sellers in our data issue purchase orders a few times, resulting in products with only a few observed cost changes. See **Figure 24.b**. This results in a

²³² Circuit City Deposition (discussing the function of price protection agreements) at 73:7-14. Emphasis added. Also see 109:15-111:7.

²³³ Retailers attempted to avoid losses from being stuck with relatively high cost computers using price protection, price renegotiation, rebate programs, or other arrangements. To the extent these arrangements are not accurately observed, pass-through estimates are biased downward.

cost that is not constant, but which changes infrequently. If cost varies only slightly, it is still difficult to identify a price-cost relationship (i.e., the slope of a straight line) with any precision. That is, the regression method attempts to separate the effect of cost from the random variation induced by the disturbance term. If the cost changes are small and infrequent, the relationship will be difficult to identify. In fact, if we want to base analysis on a product-by-product level, each product must have significant cost variation over an extended period to identify the effect of cost on price. See **Figure 24.c.**²³⁴

^{295.} For the data in this case, there is a large set of short-lived products with no cost changes and another large set of short-lived products each with a small number of cost changes. Such data sets are not amenable to a product-level analysis of pass through. In fact, product-level analyses using these data are statistically unreliable and simply do not provide any insight into whether costs were passed through.²³⁵

^{296.} However, it is important to understand that the data produced in this case is still useful for estimating pass-through. This is because **the cost changes observed for a subset of products provide a data set that, when combined over many similar products, gives reliable pass-through estimates for those products.** Moreover, the current econometrics literature tells us that if the pass-through coefficients vary by product, estimating the pass-through as if it were constant across products delivers a consistent estimate of the mean of the distribution of the pass-through coefficients.²³⁶

3. Pass-Through Can Be Measured, Using Methods Common to the Class, at Both the Initial Price Point and Through Later Declines in Price

^{297.} Conceptually, there were two ways in which continuing component cost reductions affected computer prices. First, new features and improved quality components were being added to new computer designs, creating an environment of constant dramatic price declines and impressive product improvements. Changes occurred rapidly, with new computer models shipped to replace older models every 3 to 4 months.²³⁷ Second, even within this

²³⁴ Further, if there is any random noise in the cost data, i.e., measured cost is different from actual cost, identification is even more difficult, and as already discussed, our estimate of the slope (pass-through) will be downward biased. "Errors-in-variables bias in the OLS estimator arises when an independent variable is measured imprecisely... If the measured variable equals the actual value plus a mean-zero, independently distributed measurement error term, then the OLS estimator in a regression with a single right-hand variable is biased toward zero..." J. H. Stock and M.W. Watson, *Introduction to Econometrics*, 2nd Ed., (Boston: Pearson), 2007, p. 321. Taking monthly averages of data will help mitigate this latter problem.

²³⁵ It is well known that product-specific coefficient estimates based on this approach are inconsistent (invalid). As a leading econometrics textbook explains:

"We cannot hope to get good estimators of the [product-specific coefficients] in the usual case of [data being available for limited time periods]." Wooldridge (2010), p. 308

"With fixed T we cannot consistently estimate the α_i when they are viewed as parameters." Wooldridge (2010), p. 381.

²³⁶ See Wooldridge (2010), p. 382; Wooldridge (2005), p. 387.

²³⁷ See, e.g.,

- Best Buy Depo. at 229:25-230:1 ("The typical life cycle of a laptop or desktop at Best Buy is between 13 and 19 weeks.");

relatively short window as newly introduced computer models sold in substantial volume, competition continued to drive significant cost reductions and declining retail prices. Intense competition among computer makers and across retail channels drove prices down with reductions in costs.

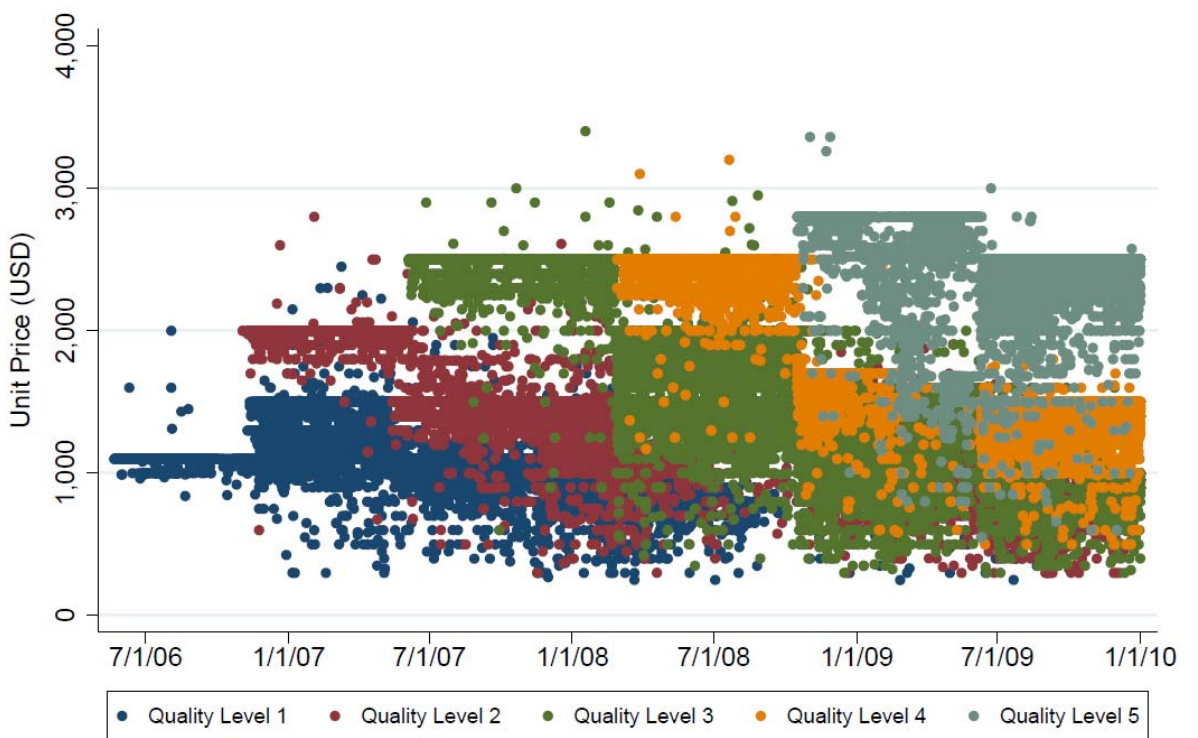
a. Common and Accepted Methods Exist to Measure the Overcharge Embedded in the Initial Purchase Price of a Computer, Taking Into Account the Quality of the Computer

298. The constant improvement in the computer features offered at any given price point is apparent in the data produced in this case. **Figures 25 and 26**, for example, show new and improved models of Apple computers being offered at given price points, while prices of models with dated features were cut. That is, new advanced models replaced older models at the original, higher price points while the now technically inferior models get slotted into lower price points.

299. Note that the Apple products have somewhat longer product lives than PCs. That is, the price profile for Apple products over their life cycle is flatter, compared with the price contour for PCs, so that more of the price performance improvement for Apple products came through the introduction of new and higher quality products at existing price points, and relatively less through price reductions for existing models.

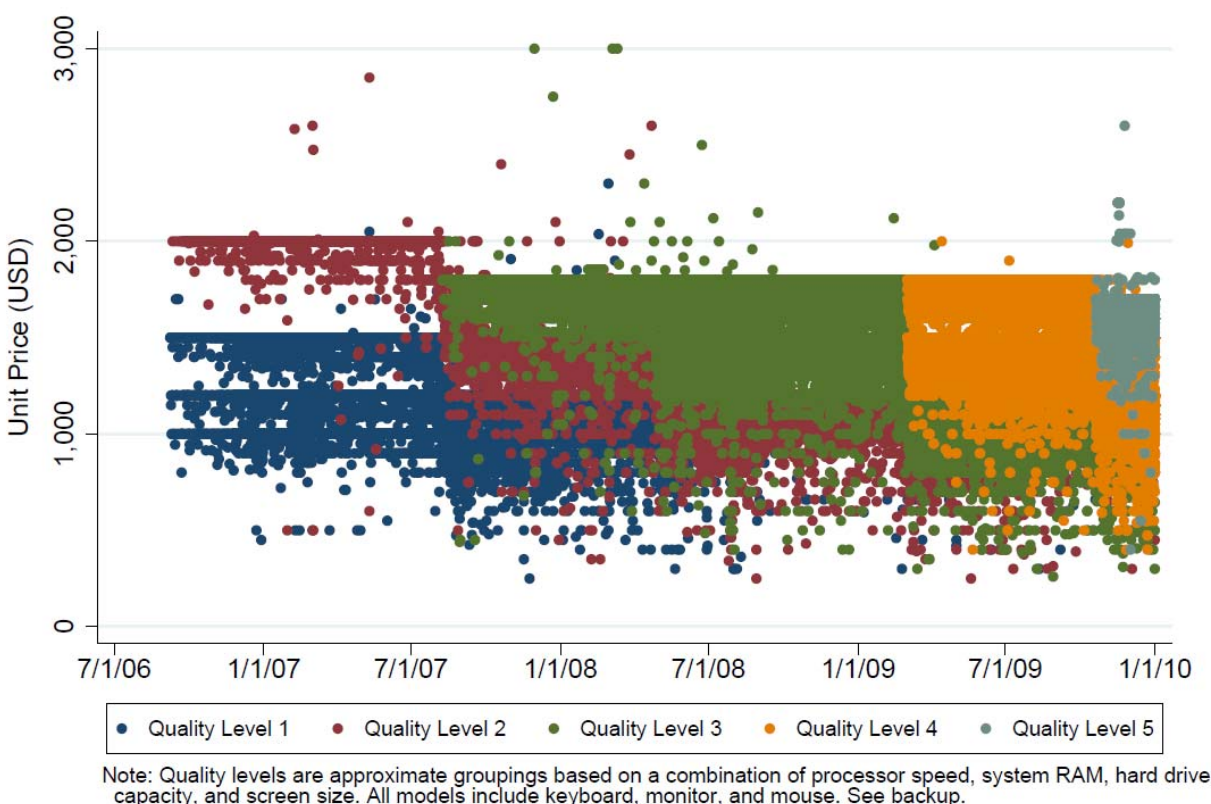
300. Even with the relatively longer product lives, **Figure 25** demonstrates that different quality Apple computers were sold at different price points or price bands, but over time the prices dropped for any given quality level, and the existing computers were replaced with better quality computers slotted into the same price bands. This demonstrates empirically the innovation cycle described above, where quality adjusted and nominal costs and prices are declining. In this context, lower costs, such as lower prices for ODDs without the collusion, would have been passed on to IPPs through better quality computers for the same price or through a lower nominal price.

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- TigerDirect Depo. at 31:7-14 (“Q: And did TigerDirect generally roll out new computing products at certain times of the year? A: Yes. Q: Can you tell me what those time periods are? A: Generally, there are three cycles per year. Typically, around the April time frame, again, for back to school around the August time frame and then again for holiday, October time frame.”).
 - Fry’s Depo. at 64:5-19 (“Q: Can you tell me the length of a typical life cycle of a laptop SKU at Fry’s? . . . A: It depends. It could be four months. It could be six months. It could be eight months, nine months. So there’s no set time frame. Q: Would you be surprised to hear that one of your competitors testified the typical life cycle of a laptop or desktop was 13 to 19 weeks? . . . A: I do not know what were the circumstances, but I would not be surprised.”); and
 - Amazon Depo. at 83:13-19 (“A: General industry trends dictate that prices for an end-of-life model, because new models are coming out, will -- people will typically try to sell through what they have on hand and mark down or liquidate in order to be able to not have old product we cannot sell because of different specifications.”).

Figure 25: Changes in Quality Level of Apple MacBooks Sold at Best Buy

Note: Quality levels are approximate groupings based on a combination of processor speed, system RAM, hard drive capacity, and screen size. See backup.

301. **Figure 26** demonstrates the same point of declining prices versus increasing quality for Apple Desktops:

Figure 26: Apple Desktop Prices and Quality Levels at Best Buy

302. **Exhibits 11A-B** illustrates this point another way for personal computer producer HP. These exhibits show computer improvements for an HP brand sold at a specific price point at Best Buy. With HP Pavilion and Compaq Presario computers, HP crammed as many attractive, and now less expensive, features as it could within its cost budget for that price point.²³⁸ These exhibits also show how the computer configuration sold at a price point one quarter, if it continued to be sold, became the computer sold at a lower price point a quarter later. Similarly, **Exhibits 12A-B** show that, while the frequency of changes differ, Apple models sold at particular price points show the same improvement in quality over time.

303. Thus, the effect of collusion in raising a major component price, like an ODD, would have been felt by consumers in reduced quality for computers priced for sale at any given price point. The reduced quality of a newly introduced computer sold at a particular price point would be expressed as an increase in the quality-adjusted price for computers sold, relative to a *but-for* world in which the ODD price had not been elevated.

²³⁸ **Exhibits 13A-D** also show improvements for other HP and Compaq models sold by Best Buy at particular price points.

b. Hedonic Price Regressions Are a Standard Econometric Method

304. The standard method used by economists, and government statisticians, in measuring prices for differentiated high tech goods like computers, which have many rapidly changing dimensions of quality and are sold for only short periods of time, is to control for those product characteristic in a statistical model that measures the relationship between product characteristics and product price at any moment in time. This is known as a hedonic function.

305. Economists at the German Statistical Office summarized the widespread acceptance of this method by economists and the governments they sometimes work for as follows:

When calculating price indexes, central importance is attached to how quality changes to observed goods can be taken into account. The objective of official price statistics is to measure what we call “pure” price changes, i.e. price movements purged of the adulterating influence of quality change. Hedonic methods, as they are now known, are special techniques for quality adjustment that have recently been incorporated into official German price statistics. They particularly lend themselves to technological goods which are subject to rapid progress and cannot be observed over a long period with the quality remaining unchanged. For hedonic quality adjustment, a good is conceptually broken down into quality features and then the influence of these features on the price is determined using regression analysis. In this way, those price changes that result only from qualitative changes to certain features can be mathematically separated from pure price changes and eliminated.

The United States has played a pioneering role in introducing hedonic methods into national price statistics, implementing a hedonic price index for computers in the mid-1980s. Hedonic methods have since been applied to many more products in the USA, such as housing rent since 1987, clothing since 1991, multi-family homes since 1993, digital phone systems since 1997 and television sets since 1999.²³⁹

306. This method is widely accepted and used by economists and statisticians. Many government statistical and economic agencies responsible for measuring national income accounts use the hedonic method to measure quality-adjusted price for high tech products. The U.S. government’s estimates of GDP, for example, use computer price indexes making use of quality adjustments from a hedonic regression model in measuring US national income, as do national income accounts for other OECD countries. Two of the economists responsible for the U.S. national income accounts note that hedonic regression methods work well in that they track changes in quality-adjusted prices measured using other established methods:

²³⁹ See S. Linz and G. Eckert, “Introducing hedonic methods in price statistics,” available at https://www.destatis.de/EN/FactsFigures/NationalEconomyEnvironment/Prices/HedonicPC.pdf?__blob=publicationFile.

There is evidence that a ‘well constructed’ matched model index for rapidly changing high-tech goods could yield a price index that adequately controls for quality differences and that this price index is consistent with a quality-adjusted price index constructed using hedonic methods. Aizcorbe, Corrado, and Doms (2003) constructed price indexes for microprocessors using high frequency disaggregated data on models whose characteristics were constant over time and found that their matched model price indexes were remarkably close to those constructed using hedonic methods (table 2). Similar results were reported in Aizcorbe, Corrado, and Doms (2000) for personal computers. Silver and Heravi (2001, 2002) report similar findings using scanner data for washing machines and televisions. However, given that we often do not have the abundant data necessary to construct such a matched model price index, then the hedonic price index is the practical approach for measuring prices of rapidly changing goods or goods that by nature are heterogeneous (e.g. custom software or homes).²⁴⁰

307. The Bureau of Labor Statistics Hedonic also uses hedonic regression methods to estimate US consumer and producer price indexes. A vast academic research literature, including studies I have authored, use hedonic methods to measure quality-adjusted price for computers and other high tech products. The use of a quality-adjusted price to analyze changes in pricing for computers is standard in the economics literature and government statistics.

308. It is possible to show statistically that there is a stable and predictable relationship between computer cost and the retailer’s introductory computer price when controlling for computer characteristics using the hedonic approach. This is unsurprising. Economic theory unambiguously predicts the relationship between observed price and the so-called hedonic function. As economist and industrial organization expert Ariel Pakes wrote, “The hedonic function is the expectation of marginal costs plus that of the mark-up conditional on ‘own-product’ characteristics.”²⁴¹

D. Empirical studies consistently show high pass-through rates

309. Using data produced in this litigation on computer prices, costs, and product characteristics, I have performed multiple studies that show how changes in computer component costs are reflected in the quality-adjusted computer prices at their introduction into the market. These hedonic studies confirm that a cost reduction (or increase) is “baked in” with roughly 100 percent pass-through rates into the initial prices that new computer models are sold at when they first hit the market.²⁴² In addition, I have performed multiple studies using the fixed

²⁴⁰ D. Wasshausen and B. R. Moulton, “The Role of Hedonic Methods in Measuring Real GDP in the United States,” (2006) *available at* <http://www.bea.gov/papers/pdf/hedonicGDP.pdf>. Note the authors compared the hedonic methods for products with high frequency data.

²⁴¹ A. Pakes, “A Reconsideration of Hedonic Price Indexes With An Application To PC’s,” *American Economic Review*, 2003, vol. 93, no. 5, pp.1578-1614.

²⁴² It is worth noting that computer OEMs and retailers commonly alternate periods of promotional discounts with sales at an initial list price when they first bring a new computer model to market. These are typically averaged together in planning product launches, when comparing initial revenue targets to cost targets.

effects approach to show that cost changes after a product's introduction are also passed through on a nearly one-to-one-basis.

310. I further add to this empirical foundation studies that test whether small (or large) cost changes after a model is first introduced are somehow treated differently by retailers than large (or small) ones. On top of this I add still another empirical economic study that asks the question, are models initially sold at higher prices somehow immune in responding to cost declines, when compared to models sold at cheaper price points? (Answer: no.) Careful study of the empirical economic evidence overwhelmingly supports the conclusion that cost changes, large and small, are passed through into prices for all kinds of computer models, both pre-configured and configure-to-order, before and after the computer model is first introduced into the market. This is consistent with the nature of a PC marketplace that economists and other analysts familiar with this industry agree has been intensely competitive in recent decades.

1. Hedonic Analysis of OEM Pass-Through Demonstrates that OEMs Passed Through Their Costs to Retailers and to IPPs

311. As I indicated in my above discussion of OEMs passing through computer costs to their customers, I have conducted analyses of OEM pass-through for Acer, Dell (both for its sales to retailers and its direct sales to consumers), HP (both for its sales to retailers and its direct sales to consumers), and Toshiba. These results are summarized in **Table 15**.

Table 15: Summary of Hedonic Pass-Through Estimates for OEMs

OEM:	<u>Desktops</u>	<u>Laptops</u>
Acer sales to retailers	1.14	1.51
[REDACTED]	[REDACTED]	[REDACTED]
HP direct sales	1.54	0.77
HP sales to retailers	0.90	1.08
Toshiba sales to retailers	n/a	1.14

Notes: For Dell direct sales, the pass-through rate is the revenue weighted average of model-specific rates. The rate is otherwise a simple average of the rates presented for each vendor.

312. For my analysis of OEM pass-through, I adopt the hedonic method. The use of this approach follows from the acquisition practices employed by large retailers and computer OEMs, which I describe in detail above. New computers reaching retailer shelves are destined to have short life-cycles, as retailers reset computer lineups by selecting computers with new configurations three to four times a year. An implication of this ongoing process is that the procurement prices agreed upon between OEMs and retailers are relatively constant over the product's life cycle, as is evident in the number of computers in the retailer data with no cost variation.²⁴³ The absence of significant procurement cost variation in the retailer data implies that the prices observed in the OEM data for products sold to retailers will also typically be constant.

²⁴³ See Flamm I, Exhibit 2 - Pass-Through 11.

Therefore, I analyze OEM pass-through to retailers using the prices set between retailers and OEMs as they negotiate the computer configurations to be offered to retail customers in each procurement cycle.

313. In my estimates of OEM pass-through to retailers presented below, I capture the negotiated price by using two relevant measures of initial price. The first of these measures is the price from the largest transaction on the first day a model is sold by OEMs to retailers.²⁴⁴ The second measure I use is the quantity weighted average price for the month when the model is first sold. The costs used in my models to measure the initial price pass-through rate corresponds to each price, that is, I use the cost associated with the largest first-day transaction and the quantity weighted average cost for the month, respectively.²⁴⁵ Using these two prices provides a robustness check, to assure that the estimate is not a result of idiosyncratic transactions.

314. In each of my OEM to retailer analyses presented below, I estimate several variants of the model. That is, I use two sets of explanatory variables that differ in how certain variables are included in the model. For example, in specification [1] (see Exhibit 14, for example) I include the size of the hard drive as a single, continuous variable whose coefficient represents the change in the price of the computer when the size of the drive increases by one gigabyte. Specification [2] controls for hard drive by including a dummy variable for each value of hard drive observed. The coefficients in that model show the price effect of a particular size of hard drive relative to other sizes.²⁴⁶ Continuous variables represent a more restrictive modeling approach. However, when the number of distinct computer models available for analysis is relatively small, as is the case in this analysis of OEM pass through rates, using continuous variables permits me to control for the price impact of important computer characteristics, such as the size of the hard drive, with greater precision. Another modeling variation I consider is the exclusion and inclusion of GDP, which will control for macroeconomic conditions. Again, given data limitations, it may not be useful to include additional variables, such as GDP, that are unlikely to provide much additional explanatory power to the model, but significantly reduce the precision of estimated coefficients.

a. Acer

315. Acer, a computer OEM,²⁴⁷ provided sales data for desktop and laptop computers, including for its Gateway and eMachine brands. I have evaluated the pass-through rates for Acer

²⁴⁴ I note an exception below in my discussion for HP.

²⁴⁵ I note exceptions below for HP and Toshiba.

²⁴⁶ Unlike most published hedonic studies, we have data on product-specific cost, which is being used to estimate pass-through. The inclusion of cost in the model implies characteristics coefficients estimate impacts on the markup portion of the computer's price only. For example, in Exhibit 15, I calculate the total impact of an increase in memory on computer price. Mathematically, the effect of increased memory on computer price is the sum of the impact on computer cost, plus the impact of the increased memory on the markup for the computer. While computers with more memory seem to have somewhat lower markups, more memory increases the cost of a computer, so the net effect of more memory on computer prices is positive as expected. The hedonic model I am estimating in this case is concerned with a different question—that is, what was the effect of increased cost on computer price holding computer characteristics constant.

²⁴⁷ <http://www.acer-group.com/public/index/services.htm>. Exhibits presenting hedonic regression results provide the data sources discussed in this section.

products using each of two the methods I introduced in my earlier report. For Acer's sales to retailers, I estimate the "baked in" initial pass-through rate by controlling for detailed computer characteristics.²⁴⁸

316. Since Acer did not provide information about the features of the computers it sold to retailers, I identify Acer computer model characteristics using descriptions found in other third party data sets. For example, Best Buy sales records include a product description field that typically identifies a computer's CPU,²⁴⁹ RAM size, hard drive size, the ODD (for desktop computers), and the LCD screen size (for laptops). I identify computer configurations using the descriptions associated with Acer, Gateway, and eMachine computer models in the data provided by Amazon, Best Buy, Ingram, MEI, PC Connection, and SED. This approach permits me to control on a model-by-model basis for detailed computer characteristics, including detailed CPU characteristics. The CPU characteristics I control for include the CPU manufacturer as well as CPU performance indicators including gigahertz ratings, cache, number of cores, number of threads, and bits. In addition to CPU, I am able to control for each computer's hard drive size, RAM memory, ODD type, screen size (for laptops), and operating system. Using this approach, I am able to identify detailed characteristics for 75 desktop and 53 laptop models for which I also have price and cost information.

317. Acer sales to retailers are presented in **Exhibit 14**. The pass-through rates for Acer sales to retailers are all greater than 100 percent. Desktop coefficients average 114 percent, and all of the coefficients are statistically significantly greater than zero but not significantly greater than 100 percent. For laptops, the pass-through estimates average 151 percent and all are significantly greater than 100 percent.

b. Dell

318. My analysis of Dell pass-through includes direct to consumer sales for configure to order computers and retailer sales for preconfigured models. Dell's estimated pass-through rates are presented in **Exhibits 16 and 17**.

319. Dell, a computer OEM, provided order-level CTO sales data for eight of its computer "brands," including the Inspiron 6000, the Inspiron Mini10, the Latitude D600, the Latitude E5410, the Latitude E5500, the Optiplex 380, and the Optiplex 745. Data for six of the brands were used in this analysis, representing 3.2 million transactions.²⁵⁰

²⁴⁸ For Acer's sales to distributors and other resellers, where there is price and cost variation after first sale, I also estimate pass-through using the fixed-effects method.

²⁴⁹ The model description includes CPU model numbers, which were used to find detailed CPU characteristics from ark.intel.com and www.cpu-world.com.

²⁵⁰ DELL_ODDSALES_00033 and DELL_ODDSALES_00036-45. Data for two products were not used. The Inspiron Mini10 does not include an internal ODD, though customers may purchase external ODDs. The Studio 1535 data could not be used for estimating a pass-through rate, since they represent too few purchases (under 900) over too brief a period of time (8 days) to provide reliable results. For information on Dell, see <http://www.dell.com/Learn/us/en/uscorp1/about-dell?c=us&l=en&s=corp&ref=ff41&delphi:gr=true>, viewed May 20, 2013.

320. For the selected products and periods, Dell provided the bill of materials (BOM) for each purchase.²⁵¹ Since Dell offers customizable products, orders can be represented by fewer than 20 BOM records or up to more than 50 records.²⁵² Descriptions provided with the bill of materials were used to map characteristics to variables used in pass-through regressions, per the following rules:

- a) Base configurations are mapped using the field “Item Class Short Desc.”
- b) Hard drives are mapped based on size and speed. If speed was not provided, they are mapped according to size.
- c) Batteries are mapped based on wattage (or watt hours). If wattage was not provided, batteries are mapped according to the number of cells.
- d) Optical disk drives are mapped by type (e.g., DVD-ROM, DVD-RW) and speed. If speed was not provided, they are mapped by type.
- e) DRAM memory is mapped by size.
- f) Monitors are mapped by size and resolution. If resolution was not provided, then monitors are mapped by size.
- g) Networking cards are mapped by their wireless standards (e.g., B/G). If that standard was not available, they are mapped by model.
- h) Other hardware is mapped by function or characteristics.
- i) Warranties are mapped by the period covered. Certain non-overlapping warranties are mapped together.
- j) Per-unit services, including installation and custom services, are mapped together.
- k) Certain other services are mapped together by duration or quantity.

²⁵¹ BusinessDictionary.com defines bill of materials as “a list of all raw materials, parts, intermediates, subassemblies, etc., (with their quantities and description) required to construct, overhaul, or repair something” (<http://www.businessdictionary.com/definition/bill-of-materials-BOM.html>, viewed May 24, 2013).

²⁵² To remove ambiguity in the number of systems purchased and in product characteristics, the analysis is based on purchases where the quantity associated with each item in the BOM is equal and where only a single item number was mapped to a characteristic variable. In addition, purchases were excluded if the revenue associated with any item number was less than zero.

- l) Premium software, operating systems, accessories, and other items are mapped according to function or characteristics.
- m) Dell's sales channels are also mapped to variables included in the regression, distinguishing channels such as business and consumer.

321. Dell's pass-through rates for direct sales are presented in **Exhibit 16**.

[REDACTED]

The Latitude E5500 is not statistically different from 100 percent, and the E5410 is statistically significantly less than 100 percent. All estimates are statistically significantly greater than zero.

322. Further breaking Dell's business pass-through rates out by small business, corporate, public, and solutions entities, the differences among them are modest and they are all statistically significantly greater than zero. See **Exhibit 18**. These pass-through rates further control for customer characteristics, showing that pass-through rates for business end users are near or above 100 percent and that they are not appreciably different than the pass-through rates for other types of customers.

323. Dell also provided data for its sales to the retailers Best Buy, CompUSA, and Newegg. Using this data, I have estimated Dell's pass-through rates for its sales of pre-configured computers to the retail channel. Dell provided descriptions of the inputs used in its pre-configured computers, allowing me to identify the following computer attributes: detailed CPU characteristics (manufacturer, GHz, cache, cores, threads, and bits), hard drive size, RAM memory, ODD, screen size (for laptops), network card (laptops), graphics card manufacturer, battery cells (laptops), Microsoft office, other premium software (such as Adobe), and the operating system. Detailed characteristics have been identified for 68 desktop models and 130 laptop models.

324. Dell sales to retailers are presented in **Exhibit 17**. The pass-through rates for Dell's sales to retailers are all greater than 100 percent. Desktop coefficients average 127 percent, and all of the coefficients are statistically significantly greater than 100 percent. For laptops, the pass-through estimates average 109 percent and all are significantly greater than zero. Only one out of the eight estimates is significantly greater than 100 percent.

c. HP

325. HP, a computer OEM, has produced bill-of-material (BOM) data that provides model-level information describing the inputs included in the computers it sold to Best Buy.²⁵³

²⁵³ <http://www8.hp.com/us/en/home.html>. See **Exhibit 19-20** for the data sources discussed in this section.

HP provided similar data for a randomly selected sample of models it sold directly to consumers through its website.²⁵⁴ HP also provided records of its sales to resellers as well as records for its direct-to-consumer sales. HP's sales data sources include revenue and quantity information but not cost. HP provided standard costs for some of the models included in its sales files. The information from these various sources has been assembled for use in estimating pass-through rates for HP's sales to retailers and for its direct-to-consumer sales.

326. HP sales to retailers are presented in **Exhibit 19**. Since the reseller sales data provided by HP do not include the date (year and month are provided), I cannot identify the price of the earliest transaction as I did for other OEMs. Consequently, only the average price from the earliest observed period is used for HP. This price is matched to the earliest observed standard cost from the cost files.²⁵⁵ Control variables included in HP's retailer pass-through model include detailed CPU characteristics, hard drive size, RAM size, ODD type, the type of the second ODD if included in the model (desktops), screen size and resolution (laptops), battery wattage (laptops), and operating system. The desktop analysis includes 118 computer models, while the laptops analysis uses 84 models.

327. The average pass-through rate estimated for desktops is 90 percent. For laptops the average pass through rate is 108 percent. All of the estimates are statistically significantly greater than zero, and none of them is significantly different from 100 percent.

328. The same approach is used to estimate the pass-through rate for HP's direct-to-consumer sales, found in **Exhibit 20**, though the prices associated with the first transactions are identified. Prices are matched to the earliest observed standard cost. For direct-to-consumer sales, 72 computer models were used in the desktop analysis and 62 laptop models were used. For direct sales, the average pass-through rate for desktops is 154 percent. All of the desktop pass-through rates for HP's direct-to-consumer sales are statistically significantly greater than 100 percent. For laptops, estimates average 77%.²⁵⁶ Laptop estimates are not statistically different from 100 percent. All estimates for HP direct sales are statistically significantly greater than zero.

d. Toshiba

329. Toshiba, a computer OEM, provided computer sales information and, separately, BOM-level cost information for models it sold to US retailers.²⁵⁷ Cost information was provided

²⁵⁴ The detailed data was requested for both configure-to-order (identified as CTO sales in HP's direct sales data) and preconfigured models (identified as STO sales in HP's direct sales data) sold to consumers on HP's website. HP provided descriptions only for STO models.

²⁵⁵ The dates associated with HP's standard costs frequently do not match the period when sales are observed. However, standard cost systems set costs according to expected costs. AccountingTools.com defines standard cost as "a predetermined cost that is based on original engineering designs and production methodologies...." <http://www.accountingtools.com/definition-standard-cost>. For a description of standard costs and standard cost systems, see http://ocw.mit.edu/courses/sloan-school-of-management/15-521-management-accounting-and-control-spring-2003/lecture-notes/web_class12.pdf: "Standard costs are the expected costs of manufacturing the product."

²⁵⁶ When including GDP, the pass-through estimates decline modestly, but the standard errors also increase significantly, suggesting that the model results are being affected by the limitations of the sample size.

²⁵⁷ <http://www.toshiba.com/us/about>. See **Exhibit 21** for the data sources discussed in this section. The cost is provided in yen, so it is converted to US dollars.

for 197 laptop computer models. To estimate the pass-through rate, Toshiba's earliest observed cost is matched to prices.²⁵⁸

330. Toshiba's BOM data included descriptions of the inputs used in its computers. That information was used to identify each model's detailed CPU characteristics (manufacturer, bits, cores, threads, GHz, cache), hard drive size and speed, RAM size, ODD type and characteristics, screen size and resolution, network card, graphics card manufacturer, battery cells, Bluetooth capability, and operating system. The results are presented in **Exhibit 21**. The average pass-through rate estimated for Toshiba's sale of laptops to retailers is 114 percent. All of the estimates are statistically significantly greater than zero, and none of them are significantly different from 100 percent.

e. Summary on OEM Pass-Through

331. This analysis, covering 859 separate observations for HP, Dell, Acer and Toshiba computers, demonstrates that for given computer characteristics, a cost decrease is passed through at roughly 100 percent into price for the new computer model. This means that if a computer manufacturer—and retailer selling the new model computer—are aiming for a particular price point, and therefore, target cost, it is the characteristics of the computer that get adjusted to meet the price and cost targets.

332. If costs were to drop in the *but-for* world, product improvements that bring cost back up to the target for some price point would be undertaken (for those retailers setting pre-determined configurations for computers at specific target prices), such that a superior computer would have been offered at that same price point. The difference between that target price point and the lower *but-for* price at which the market would have valued the now (in the *but-for* world) inferior actual computer represents harm to the consumer.

333. The hedonic regression functions describe how computer characteristics, and the cost of producing those characteristics, get translated into an observed market price. By assumption, in the *but-for* world, the characteristics of the computer do not change, but the cost of producing that computer declines, as the alleged collusion is removed. The estimated hedonic functions, showing an approximately one-to-one pass-through of cost declines into initial market price, tell us that that same computer would have had a market value below the initial price point at which it was sold in the actual world. Thus, with one-for-one pass-through of cost declines into lower prices, the decline in component costs associated with no collusion, and no overcharge, is an estimate of what the reduced market price of a consumer's computer would have been absent the component cost-raising collusion.

334. So for, example, if collusion had raised the price of the components going into a \$999 computer by \$4 in the actual world, the price of that same computer in a collusion-free *but-for* world would have been \$995. In the *but-for* world, a superior computer with better characteristics in some dimension would have been offered at the \$999 price point.

²⁵⁸ Cost is the earliest observed model-specific "TOV" cost from Toshiba's BOM data. The TOV is reported by quarter, and there is typically only a single cost observation provided per model. The cost variable is the same in the "first price" model and the "average price" model.

335. Given some set of characteristics for a computer in the real world, the hedonic function allows us to estimate what a computer with those same characteristics would have sold for in the *but-for* world, had the cost of those identical characteristics been lower. Even if computers were sold only at fixed price points (an assumption that is inconsistent with much of the evidence reviewed above), so that improved computers would have been instead sold at those fixed price points in the *but-for* world, the hedonic pass-through results allow us to predict how much lower the actual observed computer configurations would have been priced, had they still been sold, in a *but-for* world of marginally lower computer component costs. The hedonic price functions we have estimated empirically tell us that generally, the price of actual world computer configurations, if they were to instead be sold in a *but-for* world of lower computer component costs, would have declined in price by about the value of the decline in component costs.

2. Hedonic Analysis of Retailer Pass-Through: Data Demonstrates that Costs Were Passed-Through to Consumers Purchasing Computers at Price Points

336. I have also used the hedonic approach to analyze the relationship between procurement cost, computer characteristics, and price, for different retailers' initial sales prices for various laptop and desktop computer models they sold. Estimates from those models are presented in the following table, **Table 16**, with detailed results presented in **Exhibits 22 to 29**. These results show that the "baked-in" pass-through of their procurement cost is always positive and statistically significant, and generally at or above 100 percent.

Table 16: Retailers Passed Through Introductory Costs

	Desktops			Laptops		
	Sales at price points			Sales at price points		
	All sales	First day	First month	All sales	First day	First month
Best Buy	1.08	1.10	1.13	1.12	1.10	1.19
Costco	1.08	1.04	1.04	1.04	1.08	1.07
MEI	1.09	1.10	1.10	1.11	1.16	1.16
PC Connection	0.92	1.02	1.02	0.94	1.03	1.00

Notes: The pass-through is the average of the "monthly analysis" rates presented for each vendor.

337. My analysis of retailers passing through their procurement costs is based on all transactions for a model that occur within 30 days of the model's first observed sale. In those transactions, I identify observations associated with a variety of prices. Specifically, I identify any sale with the integer of price ending in the number "9." Next, I identify all transactions ending in "9" that are also equal to the introductory price, which I define as the most frequently observed price on the first day the product is sold. Finally, I identify all transactions with the integer of price ending in "9" that are also associated with the most frequently observed price during the period. That is, I analyze pass through using prices associated with 4 groups of transactions: all transactions, all sales occurring at price points, all sales at introductory price points, and all sales at the most frequently observed price point.

338. For each retailer, I use a hedonic pass-through model in which I identify detailed characteristics using product description fields provided with the retailer data. For each retailer, I control for detailed CPU characteristics, hard drive size, RAM size, ODD, screen size, and other characteristics. In the case of Best Buy, I conduct a complementary analysis using HP and Toshiba data, which provides an alternative (though largely overlapping) set of control variables. All models include a time trend. I also estimate the model with alternative sets of control variables, by including certain variables as either single, continuous measures, or as a set of dummy variables. I also examine alternative control variables for macroeconomic factors, by either including GDP and a dummy variable for the introduction of the Vista operating system, or, if there is a large number of models available to use in the analysis, by including dummy variables for the year/month the product was introduced. I analyze the data at the transaction level (with potentially millions of observations), at the weekly level (with roughly 4 observations per model), and at the model level with a single observation per model. Across all alternative model specifications, the pass-through rates are all large and typically near or greater than 100 percent,²⁵⁹ demonstrating that, even at price points, after controlling for the characteristics of components going into a pre-configured computer model, there is a roughly one-for-one link between variation in retailer procurement costs and initial sales prices.

339. I have also directly evaluated the relationship between HP's standard costs and Best Buy's prices to consumers, thereby estimating model-specific "end-to-end" pass through rates. I use the same basic hedonic framework described above, and regress Best Buy's initial prices for HP models on the standard material costs reported by HP to produce those models. In this exercise, I matched 101 desktop models and 58 laptop models. The resulting estimates are presented in **Exhibit 30**, with a pass-through rate of 111 percent for desktops and 153 percent for laptops. Both estimates are significantly greater than zero, but neither is significantly different from 100 percent. These pass-through rates link OEM input costs, such as the cost of the ODD, directly to the initial prices paid by retail consumers.

340. These retailer data show that at any price point, computer characteristics are altered so that the predictable 100 percent pass-through relationship tying computer cost to computer price is being maintained. This is just statistical methods confirming the picture painted by the documents discussed earlier: intense pressure to reduce the cost of major system components is applied to suppliers by OEMs, and if that is insufficient, characteristics of computer models are changed so that the target cost for a particular price point can be hit by both OEMs and retailers. The net result is that a successful elevation in the price of a key system component, like an ODD, relative to its price in a collusion-free *but-for* world, is a reduction in the quality of the computer sold at that price point in the actual world, relative to the improved computer that would have been sold in the *but-for* world. The standard metric for gauging the effect in the marketplace of that reduced quality is an increase in quality-adjusted price, measured using the hedonic methods employed by both the government and researchers to track quality-adjusted computer prices.

341. Thus, as computer components constantly get improved, and costs come down, the benefits are passed on to consumers in the form of higher quality, more powerful, more

²⁵⁹ HP laptops sold at Best Buy have the lowest average estimates, with an average of 82 percent.

capable computers sold at any given price. Profitability by both computer manufacturers and retailers is assured by adjusting the characteristics of the computers sold so that the difference between the cost of the new model and its price, to the retailer, and then to the final buyer, provide each participant in the sale of that computer the minimum profit margin needed to survive in this intensely competitive marketplace.

342. It is important to note that once that quality reduction, and elevation in quality-adjusted price, is baked into the design of a computer model at product launch, that harm to consumers lasts the life of the product even if there were to be no further change in the costs for components going into that product. A removal of the overcharge in the *but-for* world, and a consequent decline in cost for the price-fixed component, would trigger an improvement in the quality of the designed-in computer configuration that would be measured as a decline in quality-adjusted price for the PC purchased at that price point. Therefore, the initial collusive overcharge would have continued to harm consumers after new PC product launches even if continuing costs (and prices) had been perfectly flat after the initial product launch.

343. But the continuing cost declines (or even increases) did not just affect the initial price and product characteristics selected by OEMs and retailers for the computers they sold. Continuing reductions in component prices, working through market forces generated by intense competition among PC OEMs and retailers, led to continuing reductions in the costs, and prices, of PCs after their initial launch in many cases. These continuing cost declines, when they occurred, also led to further price reductions. Note that for existing preconfigured computer models, using designs that have already been fixed prior to product launch, the impact of further cost declines is felt only in price reductions, and not in improved product characteristics.

344. This is in contrast to configure-to-order (CTO) computer models, sold to buyers through online channels like Dell, where improved product characteristics could be configured by buyers as they became available as configuration options.

3. Fixed Effects Analysis of Pass-Through

345. In this section I present fixed effects pass-through rates. As I note above, the fixed effects approach identifies pass-through rates even in cases when information on computer characteristics is unavailable. Fixed effects does this by using model numbers and cost changes over time to identify the pass-through rate.²⁶⁰ As described above, I estimate four models for each vendor-product combination. The models differ both in the specification of cost and in the specification of demand variables. The different cost specifications are referred to as the current cost model and the lag cost model. For my pass-through estimate, I select either the current cost

²⁶⁰ Results for retailers are based on quantity weighted regressions. This is because the efficiency of estimates based on individual transaction data is potentially improved using quantity weights. That is, if the individual transactional prices have disturbance terms that are homoskedastic, then averages based on these prices will have disturbance terms that are heteroskedastic. An average of n independent and homoskedastic random variables will have a variance that is $1/n$ the variance of an individual transaction, and thus averages become heteroskedastic. The same weights are not appropriately applied to invoice data covering sales of large volumes of units however, because using this weighting scheme would imply that the price shown on an invoice for, say, 10,000 units has a variance that is $1/100$ of the disturbance term affecting price on an invoice for 100 units. Based on this, I have weighted fixed effects regressions for retailers. Exceptions to this general rule are noted in exhibits.

estimate or the lag cost estimate based on a statistical test of the lag cost terms, as described above in my model presentation. In the following summary, I describe the resulting pass-through rates as the “selected rates.” The differing specifications of demand are distinguished as model 1 (where I use direct measures of demand: US GDP and the release of Microsoft’s Vista operating system) and model 2 (where I include time period dummy variables instead of direct measures of demand). For my summary, I average the selected rates from model 1 and model 2 rather than select between them. **Exhibit 31** presents summary statistics for the fixed effects data sets, including the observations used in regressions, the total number of models used in the analysis, and the number of models with price or cost variation.

a. OEMs

346. **Table 17** summarizes OEMs’ fixed effects pass-through rates presented in this section.

Table 17: Summary of Fixed Effects Pass-Through Estimates for OEMs

OEM	<u>Desktops</u>		<u>Laptops</u>		<u>Drives</u>
Acer	0.85		1.11		n/a
Dell	n/a		n/a		0.88
NEC	n/a		n/a		0.68
Panasonic	n/a		n/a		0.98
Shuttle	1.51		n/a		n/a

Notes: Model 2 “Selected PT Rate” estimates presented in pass-through exhibits. When an OEM provided multiple data sets, averages are weighted by data set revenue. See exhibits and text for details.

(1) Acer

347. Acer’s estimated pass-through rate for sales to other resellers is presented in **Exhibit 32**. The average of selected rates is 93% for desktops and 166% for laptops. Neither of the selected desktop rates is statistically significantly greater than 100%. One of the laptop estimates is statistically significantly greater than 100%, while the other is not statistically different from 100%. All of Acer’s estimates are statistically significantly greater than zero.

(2) Dell

348. Dell provided data representing its computer system sales for direct orders placed between 2003 and 2010.²⁶¹ Within these files are nearly 1.4 million orders for “non-tied peripheral” ODDs, representing when a drive was ordered separate from a system purchase. These data were compiled to measure Dell’s pass-through of ODD costs. After applying screens, the data were collapsed into 32,551 monthly observations for 2,367 model numbers. The estimated pass-through rate for Dell’s drives is presented in **Exhibit 32**. [REDACTED]

²⁶¹ DELL_ODDSALES_00001-32, containing 218.5 million records in total. Since the characteristics of these customized purchases were not provided, they are not used to measure computer pass-through.

[REDACTED] All fixed effects pass-through estimates for Dell are significantly greater than zero.

(3) NEC

349. NEC, a defendant and a computer OEM, provided sales data for ODDs from 2003 through 2007.²⁶² The NEC data were provided in files with different formatting conventions and covering different regions. I provide separate pass-through estimates for the two sets of data files.²⁶³ The files include 207,365 records, which were screened to exclude observations representing non-ODD Products or other unwanted records.²⁶⁴ After applying screens, the data were “collapsed” into 4,597 monthly observations for 559 model numbers.²⁶⁵

350. NEC’s estimated pass-through rates are presented in **Exhibit 32**. The averages for NEC’s selected pass-through rates are 19 percent for one data set and 84 percent for the other. Three out of the four selected pass through rates are statistically significantly greater than zero, while two of the four are not statistically different from 100%. Two are significantly less than 100%. The revenue-weighted average of the estimates is 70%.

(4) Panasonic

351. Panasonic, a defendant and OEM, provided sales data for ODDs from 2003 through 2012.²⁶⁶ The Panasonic data were provided in files with different formatting conventions. I provide separate pass-through estimates for the three sets of data files. The files include 59,795 records, which were screened to exclude observations representing non-ODD

²⁶² See NECODD00011403, NECODD00011404, NEC_ODD_00002257-60, and NEC_ODD_00002262-5. See also http://www.nec.com/en/global/about/corporate_profile.html, viewed May 24, 2013.

²⁶³ I did not produce pass-through estimates for a file (NEC_ODD_00002261) representing a third formatting convention and geographic area, since it represents a limited number of sales.

²⁶⁴ See ReadNEC-Merits.do and PT_Analysis_OEMDISTRIBUTOR.do.

²⁶⁵ According to its 30(b)(6) narrative response, “NEC calculated ‘marginal cost’ every month, which consisted of ‘pure cost’ (defined as the ODD procurement price that NEC Technologies Hong Kong paid to third-party vendors (i.e., Sanshin and Mitsumi) adjusted by debit notes/credit notes less cost for rework), and logistics cost, tariffs, customs clearance fees, warehouse cost and other variable cost. As a general rule, the lowest price at which NECSAM was authorized to sell to customers, absent approval by NEC, was determined by “marginal cost” (as defined above) plus an amount necessary for NEC to attain its current budget. Customer demands and/or competitive conditions from time to time required NEC to decrease its authorized bottom price to ‘marginal cost.’” NEC Corporation’s Supplemental Narrative Responses to Plaintiffs’ Joint Notice of Deposition of Defendant NEC Corporation, March 22, 2013, pp. 22-23. In response to a question to define cost, NEC references a moving average price calculation. See “11-21-12 Letter to A Sheanin re Transactional Data Questions,” p. 4. I assume that price refers to purchase order prices paid by NEC. For example, see <http://scn.sap.com/people/vijayesh.vv/blog/2009/12/16/moving-average-price-calculation>, viewed May 27, 2013.

²⁶⁶ See PNA-CIV 0000377278, PNA-CIV 0000377283 and PNA-CIV 0000377441. See also <http://panasonic.net/corporate/>, viewed May 27, 2013.

products or other unwanted records.²⁶⁷ After applying screens, the data were “collapsed” into 4,396 monthly observations for 595 model numbers.²⁶⁸

352. Panasonic’s estimated pass-through rates are presented in **Exhibit 32**. For data set 1, the average of the selected pass-through rates is 95%. Neither estimate is significantly different from 100%. The average of the selected pass-through rates for the data set 2 is 88%. One of the estimates is significantly less than 100%, but the other is not statistically significantly different from 100%. The average of the selected pass-through rates for the data set 3 is 102%. Neither estimate is significantly different from 100%. The revenue-weighted average of Panasonic’s selected pass-through rates is 98%. All of Panasonic’s pass through rates are statistically significantly greater than zero.

353. [REDACTED]

354. [REDACTED]

b. Distributors

355. All fixed effects pass-through estimates for distributors are presented in **Exhibit 32. Table 18** summarizes distributors’ fixed effects pass-through rates presented in this section.

²⁶⁷ See ReadPanasonic-Merits.do and PT_Analysis_OEMDISTRIBUTOR.do.

²⁶⁸ PNA provided no description of cost in its 30(b)(6) narrative response (Objections and Responses of Defendant Panasonic Corporation of North America to Plaintiffs’ Joint Rule 30(b)(6) Deposition Notice, pp. 25-26). In its 30(b)(6) narrative response, “Panasonic Corp. further responds that its subsidiary, PPRD, records certain cost data in Excel and this data is reviewed periodically in reference to business plans. Panasonic Corp. also responds that some sales companies make use of SAP to record certain sales data.” Objections and Responses of Defendant Panasonic Corporation to Plaintiffs’ Joint Rule 30(b)(6) Deposition Notice, December 31, 2012, p. 32. In a letter responding to transactional data questions, Panasonic defines cost in PNA-CIV337441 as the “FOB factory sales price.” March 15, 2013 Letter to Aaron M. Sheanin, p. 3.

²⁶⁹ See “Data\System Invoices-20040101_20100101-ODD.XLS”. See also <http://us.shuttle.com/About.aspx>, viewed February 17, 2014.

²⁷⁰ See ReadShuttle-Merits.do and PT_Analysis_OEMDISTRIBUTOR.do.

Table 18: Summary of Fixed Effects Pass-Through Estimates for Distributors

Distributor	Desktops	Laptops	Drives
ASI	n/a	n/a	1.01
Ingram	1.02	1.01	1.04
SED	1.03	1.26	0.80
Synnex	1.01	1.02	1.03

Notes: Model 2 “Selected PT Rate” estimates presented in pass-through exhibits.

(1) ASI

356. ASI, a national distributor of IT hardware and software products, provided transaction level sales data on ODDs from 2004 through 2010.²⁷¹ The file includes 1.1 million observations which were screened to exclude observations representing non-ODD products or other unwanted records. After applying screens, the data were collapsed into 20,261 monthly observations for 2,109 ODD model numbers.²⁷²

357. ASI’s estimated pass-through rates are presented in **Exhibit 32**. The average of the selected models is 101%. Neither estimate is statistically different from 100%. All of ASI’s pass-through estimates are statistically significantly greater than zero.

(2) Ingram Micro

358. Ingram Micro, a distributor, provided invoice-level sales data for desktops, laptops, and ODDs from 2003 through 2011.²⁷³ Files include 6.2 million records, which were screened to exclude observations representing non-ODD products or other unwanted records.²⁷⁴ After applying screens, the data were “collapsed” into 171,791 monthly observations for 59,864 model numbers.

359. Ingram Micro’s estimated pass-through rates are presented in **Exhibit 32**. For the Ingram Micro data, averages for the selected model pass-through rates are 102% for desktops, 101% for laptops, and 104% for drives. All selected estimates are statistically significantly greater than 100%. All of Ingram Micro’s pass-through estimates are statistically significantly greater than zero.

²⁷¹ See “ODD_2004.xlsx” to “ODD_2010.xlsx”. See also <http://www.asipartner.com/Company/AboutUs/tabid/89/Default.aspx>, viewed February 17, 2014.

²⁷² See the program ReadASI-Merits.do and PT_Analysis_OEMDISTRIBUTOR.do.

²⁷³ ODD-INGRAM000037-69. See <http://phx.corporate-ir.net/phoenix.zhtml?c=98566&p=irol-aboutIMOverview>, viewed May 20, 2013.

²⁷⁴ See ReadIngram-Merits.do and PT_Analysis_OEMDISTRIBUTOR.do. See also the Letter from Angela J. Yu to Shana E. Scarlett, February 11, 2013, pp. 1-3.

(3) SED

360.

[REDACTED]

361.

[REDACTED]

(4) Synnex

362. Synnex is a large distributor of peripherals, IT systems, storage solutions, system components, software, and networking equipment, among other things.²⁷⁷ The files produced by Synnex include over 4.5 million observations which were screened to exclude observations representing non-ODD products or unwanted records. After applying screens, the data were collapsed into 94,590 monthly observations for 22,481 model numbers.²⁷⁸

363. Synnex's estimated pass-through rates are presented in **Exhibit 32**. The average of Synnex's selected pass-through estimates are 100% for desktops, 102% for laptops, and 103% for drives. Neither of the selected rates for desktops is statistically different from 100 percent, but the selected rates for laptops and drives are all statistically significantly greater than 100%. All of Synnex's pass-through rates are statistically significantly greater than zero.

c. Retailers

364. All of my fixed effects pass-through estimates for retailers are presented in **Exhibit 33. Table 19** summarizes retailers' fixed effects pass-through rates presented in this section.

²⁷⁵ [REDACTED]

²⁷⁶ [REDACTED]

²⁷⁷ See Synnex, About Synnex, available at http://www.synnex.com/about_SYNEX/CoreCompetencies.html.

²⁷⁸ ReadSynnex-Merits.do and PT_Analysis_OEMDISTRIBUTOR.do.

Table 19: Summary of Fixed Effects Pass-Through Estimates for Retailers

Retailer	Desktops		Laptops		Drives
Best Buy	0.99		1.14		1.04
[REDACTED]	[REDACTED]		[REDACTED]		[REDACTED]
Fry's	0.77		1.16		1.40
[REDACTED]	[REDACTED]		[REDACTED]		[REDACTED]
Office Depot	n/a		n/a		1.18
OfficeMax	n/a		n/a		0.96
PC Connection	0.94		0.92		1.02

Notes: Model 2 "Selected PT Rate" estimates. When a retailer provided multiple data sets, averages are weighted by data set revenue.

(1) Best Buy

365. Best Buy, a multi-channel retailer, provided data for ODDs, laptop computers, and desktop computers for the years 2004 to 2010.²⁷⁹ The combined data contain over 67 million transactions. Data were screened to exclude observations representing non-ODD products or other unwanted records, such as product descriptions reporting "DO NOT USE."²⁸⁰ After applying screens, the data were "collapsed" into 29,285 monthly observations for 2,970 model numbers.

366. Best Buy's estimated pass-through rates are presented in **Exhibit 33**. The average of Best Buy's selected rates is 170% for desktops, 179% for laptops, and 116% for drives. When including control's for store effects, these averages are 136%, 152%, and 107%, respectively. All selected estimates for computers are statistically significantly greater than 100 percent. One of the estimates for drives is statistically significantly greater than 100 percent. All estimates are statistically significantly greater than zero.

(2) CompUSA

367. CompUSA, an electronics retailer, provided transaction level sales and cost data on laptops from 1996 through 2008.²⁸¹ The file includes over 6.3 million observations which were screened to exclude observations representing non-ODD products or unwanted records. After applying screens, the data were collapsed into 34,033 observations for 3,673 model numbers.²⁸²

²⁷⁹ BBODD0000001-09 and BBODD0000011. See <http://www.bby.com/about-best-buy/>, viewed May 20, 2013.

²⁸⁰ See the program "ReadBestBuy.do." Also see the Letter and Attachment from Mr. Nicholas Cheolas to Shana E. Scarlett, November 13, 2012.

²⁸¹ See "CompUSA_Sales.txt" and "CompUSA_SKU_List.txt"; ReadCompUSA-Merits.do and PT_Analysis_Retail.do. See also http://www.systemax.com/about_us.html, viewed February 17, 2014.

²⁸² ReadCompUSA-Merits.do and PT_Analysis_Retail.do.

368. CompUSA's estimated pass-through rates are presented in **Exhibit 33** both with and without store identifiers in the model. [REDACTED]

(3) Fry's

369. Fry's, an electronics retailer, provided monthly sales and cost data on desktops, laptops and drives from 1998 to 2012.²⁸³ The file for ODD drives includes 2.5 million observations which were screened to exclude observations representing non-ODD products or unwanted records which collapsed into 12,784 monthly observations for 878 model numbers. A second group of files containing records on desktops, laptops and drives includes 1.2 million observations which were screened and collapsed into 26,208 monthly observations for 2,618 model numbers.²⁸⁴

370. Fry's estimated pass-through rates are presented in **Exhibit 33**. For the data set containing all product groups, the average of selected rates are 90% for desktops, 149% for laptops, and 140% for drives. One of the desktop estimates is significantly less than 100%. For the data set containing only drives, the average of the selected pass-through rates is 118% with or without store controls included. All other selected estimates are not statistically significantly different from 100% or significantly greater than 100%. All of Fry's pass through rate estimates are significantly greater than zero.

(4) MEI

371. [REDACTED]

372. [REDACTED]

²⁸³ See "frys_item_map.txt", "raw_sales_odd.dta", .csv files numbered 5383, 10701, 15094, 15857, 16685, 18520, 18669, 19433, 21526, 25841, 27093, 36662, 56798, 57430, 61162, 66183, and 258421 as well as "raw_sales_odd.sas7bdat" as provided in Burtis I work product. See also http://www.frys.com/template/isp/index/Frys/isp/Middle_Topics/G1%20Store%20History?site=csfooter_D, viewed February 17, 2014.

²⁸⁴ See convert_frys.sas, ReadFrys-Merits.do, ReadFrys2-Merits.do, and PT_Analysis_Retail.do.

²⁸⁵ See "2006.txt" to "2013.txt". See also <http://www.microelectronics.com/>, viewed February 17, 2014.

²⁸⁶ See ReadMEI-Merits.do and PT_Analysis_Retail.do.

373. [REDACTED]

374. [REDACTED]

(6) Office Depot

375. Office Depot, a global retailer of office supply products, provided monthly sales and cost data on ODDs from 2003 through 2013.²⁸⁹ The file includes nearly 73,000 observations which were screened to exclude observations representing non-ODD products or other unwanted records. After applying screens, the data were collapsed into 2,031 monthly observations for 140 model numbers.²⁹⁰

376. Office Depot's estimated pass-through rate is presented in **Exhibit 33**. The selected estimates average 116%. Both estimates are significantly greater than 100 percent. All of Office Depot's pass through estimates are statistically significantly greater than zero.

(7) Office Max

377. Office Max, a brick-and-mortar retailer, provided data for ODD sales from 2006 through 2012.²⁹¹ Files include 1.5 million records, which were screened to exclude observations representing non-ODD products or other unwanted records.²⁹² After applying screens, the data were "collapsed" into 1,439 monthly observations for 82 models.

378. Office Max's estimated pass-through rates are presented in **Exhibit 33**. The average of the selected pass-through rates is 104 percent. The selected estimates are not significantly different from 100 percent. All of Office Max's pass-through estimates are significantly greater than zero.

²⁸⁷ See SO.mdb. See also <http://www.newegg.com/Info/AboutUs.aspx>, viewed May 27, 2013.

²⁸⁸ See the program ReadNewegg-Merits.do and PT_Analysis_Retail.do.

²⁸⁹ See "Office Depot.dta" as provided in Burtis I workpapers. See also http://www.officedepot.com/a/companyinfo/companyfacts/index/?cm_sp=FooterLinks, viewed February 17, 2014.

²⁹⁰ See ReadOfficeDepot-Merits.do and PT_Analysis_Retail.do.

²⁹¹ "ODD - MetaData Lists.xlsx" and "ODD - Sales for Retail.xlsx." See also http://about.officemax.com/html/officemax_company_facts.shtml, viewed May 20, 2013.

²⁹² See ReadOfficeMax-Merits.do and PT_Analysis_Retail.do.

(8) PC Connection

379. PC Connection, an online retailer, provided invoice-level data for desktops, laptops, and ODDs from 2004 through 2009.²⁹³ The PC Connection data were provided in files with two separate naming conventions, one including the text “MD ODD,” and the other including the text “ODD Sales Out.” Together, the files include 2.4 million records, which were screened to exclude observations representing non-ODD products or other unwanted records.²⁹⁴ After applying screens, the data were “collapsed” into 101,423 monthly observations for 22,123 models. Pass-through estimates are provided for each set of data files.

380. PC Connection’s estimated pass-through rates are presented in **Exhibit 33**. For the MD data, the averages of selected pass-through rates are 100% for desktops, 74% for laptops, and 91% for drives. Both selected desktop estimates are not statistically different from 100%, while the selected estimates for laptops and drives are all significantly less than 100 percent. For the SO data, the averages of the selected pass-through rates are 96% for desktops, 97% for laptops, and 106% for drives. One of the selected desktop estimates is statistically significantly less than 100%. The other selected estimates are not significantly different from 100%. All of PC Connection’s pass-through estimates are significantly greater than zero.

4. Additional Pass-through Robustness Analysis

a. Analysis Using Matched Data Sources Supports Substantial Pass-Through of Costs

381. In certain cases, vendors provided data that did not strictly conform to data requests and which are not optimally suited to conducting pass-through analysis. Typically, the deficiency in these data sets is that price and quantity data were provided in one set of sales files, while cost data were provided separately in another set of purchase order files. To use these data, purchases and sales must be matched together. This is problematic because an analyst is unlikely to use a matching algorithm that corresponds to the vendors’ accounting system or its understanding of its costs. In addition, rebates and other cost-oriented arrangements the vendors have with suppliers are not observed and not accounted for in this process. Consequently, there are potentially serious deficiencies in accounting for cost changes over time. These go beyond the normal concerns about how accounting systems capture cost changes even in cases when cost, price, and quantity have been provided together in the same files.

382. However, the matching process will result in cost measurement error, which as I have noted above, will lead to underestimation of the true pass-through rate. With this in mind, my staff has matched these files together using reasonable assumptions about acquisition and sales dates. That is, the most recent observed cost from the purchase order files is matched to sales records. The resulting data sets are likely to provide lower bound estimates of the true pass-through rates. Results are presented as “directional” estimates in **Exhibit 34**. Due to problems tracking costs over time, I do not estimate a lag cost model for this set of companies.

²⁹³ MD ODD 2004.xlsx - MD ODD 2009.xlsx; ODD Sales Out 2 - 2004.xlsx- ODD Sales Out 2 - 2009.xlsx; ODD Sales Out 1 2004-2009. See <http://ir.pcconnection.com/glance.cfm>, viewed May 20, 2013.

²⁹⁴ See ReadPCConnection-Merits.do and PT_Analysis_Retail.do.

383. In brief, 21 of the 22 additional estimates in this table support my conclusion that pass-through rates in this industry are high and that defendants' overcharges would have been substantially if not completely passed through to consumers.

384. Amazon – Amazon provided ODD product sales and costs unmatched in separate files.²⁹⁵ The model 1 pass-through rate for desktops is low [REDACTED]. However, the standard error is large (58%) and implies that the rate is not statistically different than [REDACTED] either. The model 2 pass through rate for desktops is [REDACTED] and is [REDACTED]. However, it has a relatively large standard error, equal to 46%. Amazon's pass-through rates for laptops average [REDACTED] and the average for drives is [REDACTED]. Laptop and drive estimates are all statistically significantly [REDACTED] though they have relatively large standard errors, too.

385. CDW – CDW provided laptop sales and costs unmatched in separate files.²⁹⁶ CDW's pass through rates average 45%. Both estimates are statistically significantly greater than zero.

386. Costco – Costco provided desktop and laptop sales and costs unmatched in separate files.²⁹⁷ [REDACTED] Note that Costco data are also used in my hedonic analysis. Hedonic analysis relies on cost variation between products to identify pass-through rates, not on cost measurement over time. The hedonic analysis uses products' initial prices and costs, which are adequately captured by the separate data sources.

387. [REDACTED]

388. Samsung – Before I submitted my first report, Samsung described its cost variable as cost of goods sold.²⁹⁹ After I submitted my report, Samsung indicated that the cost was a

²⁹⁵ Data sources: "Legal Request - Model Numbers Data.xlsx" and "Legal Request - Model Number Sales Data.txt" See ReadAmazon-separate_sales_and_costs-Merits.do and PT_Analysis_OtherRetail.do.

²⁹⁶ Data sources: "CDW_ODD_0000001 - Confidential - CDW Customer Sales - Lithium Ion Battery Products 2009.csv", "CDW_ODD_0000002 - Confidential - Customer Sales - Lithium Ion Battery Products 2011.xlsx", "CDW_ODD_0000005 - Confidential - CDW Purchase History - Lithium Ion Products 2009.csv", "CDW_ODD_0000006 - Confidential - CDW Purchase History - Lithium Ion Products 2010-2011.xlsx". See Read_CDW-Merits.do and PT_Analysis_OtherRetail.do.

²⁹⁷ [REDACTED]

²⁹⁸ [REDACTED]

²⁹⁹ As I documented in my first report (Flamm I, fn 207), Samsung described its cost variables as "cost of goods sold" in a response to questions about transactional data. See Response to 1/23/2013 Sheanin Letter on Transaction Data, February 1, 2013, pp. 2-4.

transfer price.³⁰⁰ As I indicated in my first report, I exclude transfer prices from my pass-through analysis for reliability reasons.³⁰¹ Due to this ambiguity about Samsung's costs, I include its results as directional estimates.³⁰² Samsung's estimated pass-through rates for laptops average 93%. One of the laptop estimates is not significantly different from 100%, while the other is significantly less than 100%. Samsung's estimated pass-through rates for drives average 82%. Both drive pass-through estimates are significantly less than 100%. All of Samsung's pass-through rate estimates are statistically significantly greater than zero.

389. [REDACTED]

390. Walmart – Walmart provided ODD sales and costs unmatched in separate files.³⁰⁴ Walmart's estimated pass-through rates average 107%. Both rates are statistically significantly greater than zero.

b. Pass-through is Confirmed Over a Broad Range of Cost Change Levels

391. One robustness check I have done is to see if there are any “magic” thresholds, such as \$5 change in cost, below which cost changes have no statistically significant impact.³⁰⁵ **Exhibit 35** performed this analysis comparing pass-through above and below \$5, \$10, \$15, etc. through \$55. In all cases I found statistically significant positive pass-through above and below the “magic” threshold, and in most cases (62 out of 100), I found no statistically significant evidence of heterogeneity in pass-through above and below cost threshold.

392. Note that I am not aware of any economic theory supporting the view that above—or below—some magic cost threshold, all further reductions in cost will simply be pocketed by a producer as additional profit. Economic theory says that even a monopolist, with no competition at all, when faced with a small cost reduction, should drop price at least slightly and pass-through some portion of the cost reduction into a lower price, expanding its sales volume, and profit, purely as the result of its economic self-interest in maximizing profit! Not lowering price to expand sales in response to a decline in cost, generally, would be leaving

³⁰⁰ Defendants Samsung Electronics Co., Ltd.'s and Samsung Electronics America, Inc.'s Second Supplemental Response to Plaintiffs' Joint Notice Of 30(B)(6) Deposition to Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc., October 17, 2013.

³⁰¹ Flamm I, fn 197.

³⁰² Data sources: "SSIPart1.xlsx," "SSIPart2.xlsx," "SEAI-0052_2003.txt"- "SEAI-0052_2009A.txt," and "SEAI-0053_2009B.txt"- "SEAI-0052_2011.txt." See ReadSamsung-Merits.do and PT_Analysis_OtherOEM.do.

³⁰³ [REDACTED]

³⁰⁴ Data sources: “WM2012-15181C001701 to 3261, Native.XLSX,” “WM2012-15181C003262 to 4471, Native.XLSX,” and “WM2012-15181C000001 to 1136, Native.xlsx.” See ReadWalMart-separate_sales_and_costs-Merits.do.

³⁰⁵ This analysis was originally done in response to a misleading empirical analysis by Dr. Burtis that purported to show that small cost changes were not passed through. Her results are likely due to using an estimation method that is overly sensitive to measurement error in cost, as I explained in Flamm III, paras 152-158.

money on the table. In the ruthlessly competitive PC industry, no one ignores money on the table.

c. Quantile Analysis Confirms Pass-through of Costs for Products Sold at All Prices

393. Finally, to further analyze the possibility of unspecified heterogeneity in ongoing pass-through of further, continuing cost reductions into price, I have employed econometric tools that allow one to study the issue of heterogeneity in pass-through at different prices. The tool I am using is known as quantile regression. Quantile is a technical synonym for percentile, and the basic idea of quantile regression is to allow for heterogeneity in the effect of a variable (like cost) on an outcome (like price) at different points in the distribution of computer prices.

394. I have therefore performed a fixed effects quantile regression relating price for computers sold at various percentiles³⁰⁶ in the price distribution to costs, using Best Buy computer transactional sales data. The “fixed effect” is an unobserved model-specific quality parameter which affects price. The estimated pass-through rate is allowed to vary at different percentiles of the price distribution so that, for example, the pass-through rate for a high quality computer sold at \$999 may be different from that for a similar computer sold for \$975. I also include time indicator variables that allow the entire distribution of model prices, in any month, to shift up and down with changes in factors that shift overall supply and demand for computers and thus affect the prices of all computers.³⁰⁷

³⁰⁶ The x^{th} percentile of a rank ordering of computer models by monthly average price is the model whose price is such that all prices less than that price account for x percent of observed monthly average prices, while all prices above that price account for $100-x$ percent of prices. The median value of observations on a variable is the 50th percentile of the distribution of that variable.

³⁰⁷ The basic quantile regression model estimated was

$$P_{mt} = c_t + b(i) \text{ COST}_{mt}, \text{ with}$$

P_{mt}	price of computer model m at time t
COST_{mt}	cost of computer model m at time t
$b(i)$	pass-through coefficient for model m found at percentile i of the distribution of average monthly computer model prices
c_t	the time effect on outcome for month t .

The pass-through rate, coefficient $b(i)$, is allowed to vary by the percentile i of the price distribution, and can be interpreted as a function of an unobserved model-specific fixed quality effect and an observation-specific disturbance term. The “fixed effects” are not additive as in non-quantile fixed effects regressions and they are not estimated. Rather, this quantile technique is labeled “fixed effects” because it uses only within-model variation in costs and prices to identify the pass-through rates. A more detailed discussion of the fixed effect quantile regression model used here may be found in D. Wallace, “Did the Economic Stimulus Payments of 2008 Reduce Labor Supply? Evidence from Quantile Panel Data Estimation,” Working Paper WR-710-3, Rand Corporation, (Santa Monica), March 2014. Observed price is an increasing function of the unobserved quality index.

Note that both theory and simulation studies suggest that confidence interval estimation in quantile regression models is best done with bootstrapped percentile confidence intervals with large numbers of replications, a technique that I employed to estimate 90 percent confidence intervals for these pass-through coefficients. See J. Hahn, “Bootstrapping Quantile Regression Estimators,” *Econometric Theory*, Vol. 11, No. 1 (Mar., 1995), pp. 105-121; A. Karlsson, “Bootstrap Methods for Bias Correction and Confidence Interval Estimation for Nonlinear Quantile Regression of Longitudinal Data,” Division of Statistics Research Report 2006:2, Uppsala University, Sweden, 2006, available at <http://www.diva-portal.org/smash/get/diva2:130905/FULLTEXT01.pdf>.

395. As I commented in my previous report,³⁰⁸ and demonstrated above,³⁰⁹ monthly averages have some distinct advantages over individual transactional data when analyzing determinants of price for different individual models of computers. This is because we would expect to observe substantial measurement errors in both cost and price when looking at daily transactional data. For these reasons, I used the distribution of monthly average prices, by computer model, in my quantile regression analysis.³¹⁰

396. Returning to the issue of heterogeneity in pass-through for computers sold at different price points, my fixed effect quantile regression model provides some useful answers. For Best Buy sales of desktop computers, and separately, for laptop computers, my regression model provides an answer to the question, if computer costs across the entire distribution of computer models at any moment in time were to generally increase by, say \$5, how much would the price change for computers at the percentile corresponding to \$999 in the overall price distribution? **Table 20** shows the results of performing this analysis for percentiles in the distribution of all monthly average prices corresponding to values ending in \$99, from \$299 to \$999. At all the illustrative percentiles analyzed, there was statistically significant positive pass-through, generally exceeding 100 percent.

³⁰⁸ Flamm II, ¶¶ 15-19, 169-179.

³⁰⁹ See Section V.C.1.

³¹⁰ As a robustness check in a previous report, I ran the same regressions using the distribution of weekly average price by computer model and found somewhat lower point estimates of pass-through, as would be predicted based on the direction of bias for coefficients in linear models predicted with measurement error. See Flamm III, ¶167 and Table 7.

Table 20: Pass-Through at Different Computer Prices (Quantile Regression)

Laptops					
<u>Quantile</u>	<u>Price²</u>	<u>Coef.</u>	<u>Std. Err.</u>	<u>Bootstrap Confidence Interval</u>	
				<u>Lower Bound</u>	<u>Upper Bound</u>
11	\$299.99	1.94	0.328	1.58	2.54
21	\$399.99	2.33	1.576	1.74	3.50
33	\$499.99	2.02	0.248	1.62	2.58
45	\$599.99	1.69	0.212	1.46	2.40
58	\$699.99	1.65	0.458	1.35	1.99
68	\$799.99	1.51	0.252	1.30	1.74
76	\$900.00	1.39	0.142	1.23	1.53
81	\$999.99	1.23	0.055	1.19	1.42

Desktops					
<u>Quantile</u>	<u>Price²</u>	<u>Coef.</u>	<u>Std. Err.</u>	<u>Bootstrap Confidence Interval</u>	
				<u>Lower Bound</u>	<u>Upper Bound</u>
14	\$299.99	1.67	0.111	1.48	1.88
29	\$399.99	1.46	0.076	1.36	1.59
44	\$499.99	1.31	0.041	1.25	1.47
58	\$599.99	1.25	0.045	1.18	1.34
68	\$702.33	1.19	0.038	-2.09	1.24
75	\$800.18	1.15	0.028	1.13	1.20
80	\$899.99	1.13	0.015	1.12	1.18
84	\$999.99	1.12	0.011	1.11	1.16

Sources: BBODD0000002-11. See BB_quantile_fe_bootse_desktopX99.do and BB_quantile_fe_bootse_laptopX99.do (where X is 2,3,...,9).

Notes:

1. A quantile regression is a model in which a specific percentile of a response variable (like price) is modeled as a function of observed covariates (like cost), with coefficients that vary by percentile.
2. "Price" refers to the specified quantile of the unconditional price distribution for each computer type (laptops or desktops). Each quantile was chosen as the percentile for which the price was closest to the corresponding "X99" price point.

5. Summary of Pass-Through Results

397. All these varied analyses of different data sets from different computer producers and retailers produce essentially the same answer: substantial positive rates of cost pass-through, generally near or above 100 percent. The conclusion that these methods are capable of demonstrating pass-through, and therefore impact, is unassailable. Further, the broad and consistent results paint a coherent picture of impact across the entire class of purchasers of ODD products.

398. **Table 21** shows that my pass-through analysis is based on an overwhelming amount of commerce for ODD products.

**Table 21: Pass-Through Rates
Are Estimated Using a Vast Amount of Commerce**

Vendor	Revenue			Units			No. Models		
	Desktops	Laptops	Drives	Desktops	Laptops	Drives	Desktops	Laptops	Drives
Acer (non-retail)	7,533,384,927	4,316,009,817	-	14,693,845	5,810,286	-	13,418	15,228	-
Synnex	4,207,353,688	7,447,970,117	122,671,130	5,679,899	9,115,832	2,977,642	51,944	78,510	11,540
Best Buy	8,822,794,532	15,202,486,782	537,847,042	14,563,476	22,625,167	5,435,255	13,606	10,940	4,739
████████	████████	████████	████████	████████	████████	████████	████████	████████	████████
Frys	436,813,963	1,613,794,122	581,484,062	790,023	1,934,750	6,246,492	6,268	17,120	15,595
██████	████████	████████	████████	████████	████████	████████	████████	████████	████████
██████	████████	████████	████████	████████	████████	████████	████████	████████	████████
Office Depot	-	-	38,211,327	-	-	428,324	-	-	2,037
OfficeMax	-	-	31,011,704	-	-	452,607	-	-	1,438
PC Connection MD	151,962,995	267,406,281	7,330,318	200,088	190,612	64,818	7,382	11,467	6,703
PC Connection SO	520,588,225	1,056,823,773	27,195,907	699,609	822,924	305,155	21,800	37,826	16,248
ASI	-	-	616,823,996	-	-	18,701,191	-	-	20,267
Ingram	3,378,063,900	6,878,973,245	265,588,765	4,678,175	6,431,565	4,636,236	40,153	69,541	19,798
██████	████████	████████	████████	████████	████████	████████	████████	████████	████████
NEC	-	-	3,654,357,549	-	-	76,837,815	-	-	4,593
Panasonic	-	-	442,171,089	-	-	8,961,222	-	-	4,396
██████	████████	████████	████████	████████	████████	████████	████████	████████	████████
Other	1,342,800,505	4,118,254,750	2,059,482,357	1,296,568	4,618,246	91,813,977	340	7,325	1,268
Acer Retail	1,869,386,309	5,134,319,070		4,391,824	9,981,124		75	53	
██████	████████	████████		████████	████████		████████	████████	
██████	████████	████████	████████	████████	████████	████████	████████	████████	████████
HP Direct	37,737,547	52,276,156		50,161	59,849		72	62	
HP Retail	3,982,194,704	2,483,561,638		5,667,380	2,866,816		118	84	
Toshiba Retail	1,159,841,064	-		1,409,848	-		197	197	
Total	████████	████████	████████	████████	████████	████████	████████	████████	████████
	Revenue	Units	No. Models						
Grand Total	████████	████████	████████						

Note: Based on third party data presented in pass-through exhibits included in this report.

399. The pass-through coefficients that I have estimated using these data consistently show evidence of pass-through and overwhelmingly support common, class-wide damage. See **Table 22**.

Table 22: Pass-Through Rates Overwhelmingly Support Common Class-Wide Impact
(page 2 of 2)

		Transaction Analysis																							
		1			2			3			4			5			6			7			8		
		Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC
Best Buy	DT	1.060	0.037	Exc. Unl.	1.061	0.042	Exc. Unl.	1.059	0.049	Exc. Unl.	1.031	0.05	Exc. Unl.	1.143	0.02	Exc. Unl.	1.117	0.023	Exc. Unl.	1.069	0.066	Exc. Unl.	1.026	0.065	Exc. Unl.
	DT	1.067	0.039	Exc. Unl.	1.064	0.042	Exc. Unl.	1.055	0.040	Exc. Unl.	1.029	0.06	Exc. Unl.	1.144	0.022	Exc. Unl.	1.116	0.023	Exc. Unl.	1.062	0.065	Exc. Unl.	1.025	0.065	Exc. Unl.
	DT	1.095	0.027	Exc. Unl.	1.091	0.029	Exc. Unl.	1.083	0.028	Exc. Unl.	1.067	0.027	Exc. Unl.	1.127	0.024	Exc. Unl.	1.102	0.025	Exc. Unl.	1.066	0.067	Exc. Unl.	1.028	0.068	Exc. Unl.
	DT	1.080	0.055	Exc. Unl.	1.148	0.058	Exc. Unl.	1.157	0.06	Exc. Unl.	1.133	0.063	Exc. Unl.	1.123	0.047	Exc. Unl.	1.116	0.043	Exc. Unl.	1.178	0.056	Exc. Unl.	1.081	0.069	Exc. Unl.
Best Buy	DT	1.098	0.059	Exc. Unl.	1.149	0.063	Exc. Unl.	1.150	0.068	Exc. Unl.	1.129	0.063	Exc. Unl.	1.127	0.048	Exc. Unl.	1.131	0.042	Exc. Unl.	1.172	0.07	Exc. Unl.	1.030	0.074	Exc. Unl.
	LT	1.140	0.029	Exc. Unl.	1.081	0.037	Exc. Unl.	1.146	0.029	Exc. Unl.	1.077	0.036	Exc. Unl.	1.090	0.026	Exc. Unl.	1.097	0.035	Exc. Unl.	1.148	0.036	Exc. Unl.	1.063	0.045	Exc. Unl.
	LT	1.148	0.028	Exc. Unl.	1.080	0.035	Exc. Unl.	1.137	0.028	Exc. Unl.	1.075	0.038	Exc. Unl.	1.092	0.027	Exc. Unl.	1.102	0.037	Exc. Unl.	1.139	0.035	Exc. Unl.	1.060	0.042	Exc. Unl.
	LT	1.149	0.024	Exc. Unl.	1.109	0.03	Exc. Unl.	1.129	0.029	Exc. Unl.	1.073	0.03	Exc. Unl.	1.093	0.026	Exc. Unl.	1.103	0.03	Exc. Unl.	1.163	0.029	Exc. Unl.	1.071	0.038	Exc. Unl.
	LT	0.823	0.01	Exc. Unl.	0.696	0.075	Exc. Unl.	0.791	0.093	Exc. Unl.	0.856	0.071	Exc. Unl.	1.044	0.119	Exc. Unl.	0.917	0.107	Exc. Unl.	0.900	0.154	Exc. Unl.	0.737	0.131	Exc. Unl.
	LT	0.747	0.097	Exc. Unl.	0.632	0.068	Exc. Unl.	0.725	0.088	Exc. Unl.	0.626	0.067	Exc. Unl.	1.139	0.068	Exc. Unl.	1.082	0.1	Exc. Unl.	0.863	0.16	Exc. Unl.	0.709	0.128	Exc. Unl.

PC Connection	DT	1.045	0.019	Exc. Unl.	1.033	0.022	Exc. Unl.	1.036	0.017	Exc. Unl.	1.023	0.021	Exc. Unl.	1.026	0.02	Exc. Unl.	0.993	0.03	Exc. Unl.	1.025	0.02	Exc. Unl.	1.011	0.026	Exc. Unl.
	DT	1.042	0.02	Exc. Unl.	1.032	0.023	Exc. Unl.	1.035	0.017	Exc. Unl.	1.022	0.021	Exc. Unl.	1.024	0.019	Exc. Unl.	0.990	0.031	Exc. Unl.	1.025	0.02	Exc. Unl.	1.011	0.026	Exc. Unl.
	DT	1.038	0.022	Exc. Unl.	1.029	0.025	Exc. Unl.	1.035	0.013	Exc. Unl.	1.020	0.017	Exc. Unl.	1.025	0.021	Exc. Unl.	0.987	0.03	Exc. Unl.	1.028	0.015	Exc. Unl.	1.012	0.019	Exc. Unl.
PC Connection	LT	0.974	0.014	Exc. Unl.	0.947	0.016	Exc. Unl.	0.949	0.01	Exc. Unl.	1.033	0.012	Exc. Unl.	1.049	0.017	Exc. Unl.	1.035	0.02	Exc. Unl.	1.041	0.014	Exc. Unl.	1.021	0.018	Exc. Unl.
	LT	0.974	0.014	Exc. Unl.	0.948	0.016	Exc. Unl.	0.949	0.01	Exc. Unl.	1.033	0.012	Exc. Unl.	1.050	0.017	Exc. Unl.	1.036	0.02	Exc. Unl.	1.040	0.014	Exc. Unl.	1.020	0.018	Exc. Unl.
	LT	0.978	0.013	Exc. Unl.	0.952	0.015	Exc. Unl.	1.045	0.01	Exc. Unl.	1.024	0.013	Exc. Unl.	1.043	0.018	Exc. Unl.	1.019	0.022	Exc. Unl.	1.035	0.015	Exc. Unl.	1.008	0.019	Exc. Unl.
Monthly Analysis																									
Best Buy		Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC
	DT	1.068	0.04	Exc. Unl.	1.069	0.046	Exc. Unl.	1.174	0.024	Exc. Unl.	1.184	0.026	Exc. Unl.	1.083	0.029	Exc. Unl.	1.077	0.036	Exc. Unl.	1.140	0.029	Exc. Unl.	1.132	0.034	Exc. Unl.
	DT	1.075	0.042	Exc. Unl.	1.073	0.047	Exc. Unl.	1.170	0.049	Exc. Unl.	1.181	0.026	Exc. Unl.	1.084	0.03	Exc. Unl.	1.075	0.035	Exc. Unl.	1.136	0.029	Exc. Unl.	1.136	0.034	Exc. Unl.
	DT	1.105	0.032	Exc. Unl.	1.103	0.035	Exc. Unl.	1.193	0.025	Exc. Unl.	1.202	0.025	Exc. Unl.	1.139	0.033	Exc. Unl.	1.135	0.034	Exc. Unl.	1.119	0.036	Exc. Unl.	1.121	0.037	Exc. Unl.
	DT	1.100	0.067	Exc. Unl.	1.147	0.079	Exc. Unl.	1.288	0.068	Exc. Unl.	1.349	0.079	Exc. Unl.	1.322	0.109	Exc. Unl.	1.361	0.166	Exc. Unl.	1.278	0.054	Exc. Unl.	1.131	0.118	Exc. Unl.
	DT	1.097	0.072	Exc. Unl.	1.148	0.087	Exc. Unl.	1.297	0.065	Exc. Unl.	1.353	0.077	Exc. Unl.	1.344	0.092	Exc. Unl.	1.368	0.119	Exc. Unl.	1.298	0.055	Exc. Unl.	1.125	0.131	Exc. Unl.
Best Buy	LT	1.159	0.03	Exc. Unl.	1.085	0.039	Exc. Unl.	1.196	0.022	Exc. Unl.	1.165	0.032	Exc. Unl.	1.109	0.035	Exc. Unl.	1.135	0.036	Exc. Unl.	1.200	0.022	Exc. Unl.	1.166	0.033	Exc. Unl.
	LT	1.143	0.029	Exc. Unl.	1.084	0.037	Exc. Unl.	1.200	0.028	Exc. Unl.	1.172	0.032	Exc. Unl.	1.113	0.035	Exc. Unl.	1.134	0.036	Exc. Unl.	1.204	0.022	Exc. Unl.	1.172	0.033	Exc. Unl.
	LT	1.174	0.026	Exc. Unl.	1.113	0.034	Exc. Unl.	1.200	0.026	Exc. Unl.	1.190	0.036	Exc. Unl.	1.068	0.044	Exc. Unl.	1.065	0.04	Exc. Unl.	1.206	0.026	Exc. Unl.	1.197	0.037	Exc. Unl.
	LT	0.824	0.134	Exc. Unl.	0.667	0.119	Exc. Unl.	1.037	0.229	Exc. Unl.	0.735	0.272	Exc. Unl.	0.914	0.19	Exc. Unl.	0.838	0.341	Exc. Unl.	1.055	0.236	Exc. Unl.	0.753	0.283	Exc. Unl.
LT	0.747	0.132	Exc. Unl.	0.633	0.113	Exc. Unl.	1.026	0.259	Exc. Unl.	0.709	0.279	Exc. Unl.	0.912	0.234	Exc. Unl.	0.874	0.345	Exc. Unl.	1.024	0.256	Exc. Unl.	0.732	0.29	Exc. Unl.	

PC Connection	DT	0.928	0.029	Exc. Unl.	0.911	0.029	Exc. Unl.	1.061	0.036	Exc. Unl.	1.062	0.037	Exc. Unl.	1.032	0.014	Exc. Unl.	1.018	0.017	Exc. Unl.	1.028	0.014	Exc. Unl.	1.019	0.015	Exc. Unl.
	DT	0.925	0.029	Exc. Unl.	0.900	0.029	Exc. Unl.	1.060	0.017	Exc. Unl.	1.062	0.037	Exc. Unl.	1.028	0.014	Exc. Unl.	1.014	0.017	Exc. Unl.	1.027	0.014	Exc. Unl.	1.017	0.015	Exc. Unl.
	DT	0.932	0.028	Exc. Unl.	0.908	0.029	Exc. Unl.	1.064	0.037	Exc. Unl.	1.066	0.036	Exc. Unl.	1.032	0.016	Exc. Unl.	1.016	0.019	Exc. Unl.	1.031	0.014	Exc. Unl.	1.024	0.016	Exc. Unl.
PC Connection	LT	0.959	0.02	Exc. Unl.	0.915	0.02	Exc. Unl.	0.995	0.01	Exc. Unl.	0.972	0.012	Exc. Unl.	1.046	0.015	Exc. Unl.	1.027	0.019	Exc. Unl.	1.012	0.017	Exc. Unl.	0.986	0.021	Exc. Unl.
	LT	0.959	0.019	Exc. Unl.	0.918	0.019	Exc. Unl.	0.995	0.01	Exc. Unl.	0.974	0.012	Exc. Unl.	1.046	0.015	Exc. Unl.	1.027	0.019	Exc. Unl.	1.012	0.017	Exc. Unl.	0.987	0.021	Exc. Unl.
	LT	0.959	0.018	Exc. Unl.	0.922	0.019	Exc. Unl.	0.996	0.01	Exc. Unl.	0.973	0.012	Exc. Unl.	1.039	0.015	Exc. Unl.	1.016	0.019	Exc. Unl.	1.010	0.017	Exc. Unl.	0.982	0.022	Exc. Unl.
Weekly Analysis																									
Best Buy		Coef.	Std. Err.	IPCC	Coef.	Std. Err.	IPCC	Likelihood characterization of probability of observing data if no impact assumed, using IPCC categorization:								Exhibit Part A Summary				Exhibit Part B Summary					
	DT	1.067	0.038	Exc. Unl.	1.069	0.043	Exc. Unl.	0-1% probability: Exc. Unl. 0-5% probability: Exc. Unl. 0-10% probability: Very Unl. 0-33% probability: Unlikely 0-50% probability: M.U.T.L. 50-100% probability: M.L.T.U. 66-100% probability: Likely 90-100% probability: Very Lik.								Sum		Share		Sum		Share			
	DT	1.075	0.04	Exc. Unl.	1.072	0.044	Exc. Unl.									246	96%	450	100%						
	DT	1.104	0.029	Exc. Unl.	1.102	0.03	Exc. Unl.									6	2%	0	0%						
	DT	1.100	0.058	Exc. Unl.	1.148	0.061	Exc. Unl.									4	2%	0	0%						
	DT	1.098	0.061	Exc. Unl.	1.149	0.068	Exc. Unl.									1	0%	0	0%						
	DT	1.148	0.061	Exc. Unl.	1.149	0.068	Exc. Unl.									1	0%	0	0%						
DT	1.148	0.061	Exc. Unl.	1.149	0.068	Exc. Unl.	0									0%	0	0%							
Best Buy	LT	1.149	0.029	Exc. Unl.	1.084	0.037	Exc. Unl.									0		0%		0		0%			
	LT	1.142	0.028	Exc. Unl.	1.084	0.038	Exc. Unl.									0		0%		0		0%			
	LT	1.173	0.024	Exc. Unl.	1.111	0.031	Exc. Unl.									0		0%		0		0%			
	LT	1.824	0.106	Exc. Unl.	0.667	0.08	Exc. Unl.									0		0%		0		0%			
	LT	0.747	0.101	Exc. Unl.	0.633	0.073	Exc. Unl.									0		0%		0		0%			

Note: Regression results from tables and exhibits presented in this report.

400. In short, I have performed a variety of analyses to examine the issue of pass-through of cost into price. The analyses have separately analyzed cost changes “baked-in” to the initial price for the configuration sold at some particular price point for preconfigured computers

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(my hedonic analyses of pass-through for OEM standard cost, and “baked in” initial purchase cost pass-through for the retailers, shown in this report), the pass-through of ongoing cost changes into preconfigured computers after their first sales launch (my fixed effect analysis of ongoing cost pass-through), the pass-through of initial and ongoing costs into CTO computers (the Dell hedonic pass-through), and my quantile regression analysis of pass-through at different price-points for Best Buy laptop and desktop computers.

VI. CHANNEL-WEIGHTED PASS-THROUGH

401. Since ODD-containing products can pass through multiple vendors in different segments of a sales channel on their way to the final indirect purchasers, vendor pass-through estimates can be used in the context of the sales channels segments in which they participate to assess the impact of the defendants’ collusion on the market. A relatively low or high pass-through estimate for a small vendor selling to a small segment of a smaller sales channel should not be given more weight than larger vendors selling in other larger segment of a larger sales channels. **Table 23** presents my calculation of the share of sales going through different sales channels.

Table 23: Revenue Share by Sales Channel Segment

Shares by Sales Channel Segment	Desktops	Laptops	Drives
ODD Manufacturer Sales¹			
A. Share to Distributors	N/A	N/A	9.1%
B. Share to Computer Makers	N/A	N/A	89.1%
G. Share to Retailers	N/A	N/A	1.8%
H. Direct to Consumer	N/A	N/A	0.02%
Computer Maker Sales²			
C. Direct Sales Share	54.46%	54.46%	54.46%
D. Indirect Sales Share	45.54%	45.54%	45.54%
Computer Maker Indirect Sales³			
E. Share to Product Distributors	38.8%	38.8%	38.8%
F. Share to Retailers	61.2%	61.2%	61.2%
Shares by Sales Channel⁴	Desktops	Laptops	Drives
Distributors->Computer Makers->Product Distributors->Retailers ⁵	1.6%	1.6%	1.6%
Distributors->Computer Makers->Retailers ⁶	2.6%	2.6%	2.5%
Distributors->Computer Makers ⁷	5.1%	5.1%	5.0%
Computer Makers->Product Distributors->Retailers ⁸	16.0%	16.0%	15.8%
Computer Makers->Retailers ⁹	25.3%	25.3%	24.8%
Computer Makers ¹⁰	49.4%	49.4%	48.5%
Retailers ¹¹	N/A	N/A	1.8%
Direct to Consumer ¹²	N/A	N/A	0.02%

Sources and Notes:

1. Defendant direct sales share by classified customer type. Computer Makers (89.1%) = Computer OEM (82.3%) + ODM/EMS (4.0%) + Other OEM (2.8%).

2. "Market Making in the PC Industry," Personal Computing Industry Center, March 2007, p. 5. For Desktops, Laptops, and Drives, product makers' direct sales share is the share in 2005 (54.46%). Computer makers' indirect sales share equals 100% - Computer makers' direct sales share.

3. For Desktops, Laptops, and Drives, distributor and retailer shares are based on an estimate of HP's sales to distributors as a share of its total indirect product sales from 2003 to 2009.

4. The share of total revenue that flows through each sales channel equals the product of the revenue shares that flow through each segment of the channel.

5. $A \times D \times E$ for Drives; $A \times D \times E / (A + B)$ for Desktops and Laptops, using Drives' A and B.

6. $A \times D \times F$ for Drives; $A \times D \times F / (A + B)$ for Desktops and Laptops, using Drives' A and B.

7. $A \times C$ for Drives; $A \times C / (A + B)$ for Desktops and Laptops, using Drives' A and B.

8. $B \times D \times E$ for Drives; $B \times D \times E / (A + B)$ for Desktops and Laptops, using Drives' A and B.

9. $B \times D \times F$ for Drives; $B \times D \times F / (A + B)$ for Desktops and Laptops, using Drives' A and B.

10. $B \times C$ for Drives; $B \times C / (A + B)$ for Desktops and Laptops, using Drives' A and B.

11. G.

12. H.

402. ODD manufacturers' sales data are used to determine their direct sales customer segment shares. The "ODD Manufacturer Sales" section of **Table 23** presents the shares to

distributors, computer makers, retailers, and direct to consumer sales found in the defendants' sales data.³¹¹

403. The "Computer Maker Sales" section of **Table 23** presents a split of the sales channels for U.S. computer makers by type of channel. Direct sales from the computer makers to the final computer consumers were 54.46% of sales during the conspiracy, with the remaining 45.54% being indirect sales through third parties.³¹² Of these indirect computer sales through third parties, 38.8% were to distributors and 61.2% were to retailers and other resellers.

404. The "Share by sales channel" section of **Table 23** uses these statistics to estimate the share of ODD-containing products sold by sales channels. Later, these shares are used in **Table 25** to combine all of the sales channels for each ODD-containing product type into a single estimate for that product.³¹³ However, first the pass-through for each product's supply channel segments must be determined.

Table 24: Pass-Through for Desktops

³¹¹ Distributors have a 9.1% share of Defendant's ODD sales. Computer Makers have an 89.1% share (Computer Makers include Computer OEMs (82.3%), ODM & EMSs (4.0%), and Other OEMs (2.8%). Other OEMs are entities that sell equipment for use with computers such as third party branded ODDs. Retailers have a 1.8% share and Direct to Consumer sales have a 0.02% share.

³¹² "Market Making in the PC Industry," Personal Computing Industry Center, March 2007, p. 5. In 2005, in the middle of the conspiracy, the U.S. computer direct sales share in 2005 was 54.46% with an indirect sales share of 45.54% as shown by U.S. shipments.

³¹³ Separate estimates are performed for desktop computer, laptop computers, and for sales of standalone ODD drives.

1. Computer Maker-Desktops		Pass-Through ¹	% of US Shipments	Shipments Source ²	
Acer Retailer		114%	2.3%	IDC Shipment Share *	Retailer Share
Acer to Other Resellers		85%	2.9%	IDC Shipment Share *	Other Reseller Share
HP Direct		154%	6.5%	IDC Shipment Share *	Direct Share
HP Retailer		90%	16.3%	IDC Shipment Share *	Indirect Share
Average		119%			
Average (quantity weighted)		112%			
2. Product Distributor-Desktops		Revenue (\$'000)		Revenue Source	
Ingram		102%	\$22,600,000	CRN 2003	
SED		103%	\$392,445	CY 2003 from 2004 10-K	
Synnex		101%	\$4,100,000	CRN 2003	
Average		102%			
Average (revenue weighted)		102%			
3. Retailer-Desktops		Vendor		Represented	
		Revenue (\$'000) ³		Store Type Revenue (\$'000) ⁴	
Best Buy		108%	\$59,883,000	TWICE 2003-2008	EA/N Electronics/Appliance stores/Multi-regional
Costco		108%	\$4,330,000	TWICE 2003-2008	Warehouse clubs
Fry's		77%	\$5,380,000	TWICE 2003-2008	EA/N Electronics/Appliance stores/Multi-regional
MEI		109%	\$3,686,000	TWICE 2003-2008	CS Computer stores
PC Connection		92%	\$9,285,732	2003-2008 from PC Connection 10-Ks	CD/I Consumer direct/Internet shopping ⁵
Average		96%			
Average (revenue weighted)		103%		Average (store type revenue weighted)	
				103%	
				2003 - 2008	Store Type
				TWICE	Revenues (\$m)
					\$65,406
					\$8,582
					\$65,406
					\$19,777
				\$15,551,872	CD/I Consumer direct/Internet shopping ⁵
					\$26,487

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Sources and Notes:

1. Pass-through rates are found in Section V.D of my report. For a given company, pass-through rates estimated by hedonic analysis are selected where available. Fixed effects pass-through estimates are used where hedonic estimates are not available. "Directional" pass-through estimates are not sufficiently reliable to be used to estimate channel-weighted pass-through.
2. Shares are based on IDC US PC shipments by vendor. Dell and HP's direct and indirect shares are 2005 PC shipment shares. Acer's retail and other reseller shares are based on 2005 Acer and Gateway PC shipment shares by channel. See "Market Making in the PC Industry," Personal Computing Industry Center, March 2007.
3. Vendor revenue includes "notebook and desktop PCs and monitors; hardware such as hard drives, keyboards, PC cards and mice; external drives; printers; digital cameras; and software and peripheral accessories" according to TWICE.
TWICE_top25_PC_retailers_2009_summary.pdf.
4. Represented Store Type Revenues = (Vendor Revenue / (Sum of all Vendors in the same TWICE Store Type Revenue in this table's Section 3)) * TWICE Total Store Type Revenues.
5. PC Connection's revenues were not found in the top 25 TWICE lists so they were added to the CD/I segment's total revenue using data from PC Connection's 2004 10-K. Dell data were also removed from this segment's total.

405. **Table 24** shows this process for desktop computers. The first section presents the computer makers pass-through rates and the relative share of the U.S. desktop market each of them represents based on data from IDC.³¹⁴ I then calculate both the simple average and the share weighted average pass-through rates that take into account these relative shares. The second section does this same analysis for distributors of desktop computers.³¹⁵

406. The third section of **Table 25** does this for retailers using data from TWICE. Every year TWICE classifies the Top 25 Computer Retailers into store types such as EA/N Electronics/Appliance stores/Multi-regional (including Best Buy, Fry's, and others); CD/I Consumer direct/Internet shopping; and CS Computer stores. The retailers in TWICE's Top 25 Computer Retailers lists sold 86.1% of all retail computers in the U.S. from 2003 through 2009.³¹⁶ Since TWICE groups these retailers into store types, an additional weighted pass-through taking into account the store types and the volumes they represent can be done.

407. **Exhibits 37D-E** do similar analyses for Laptops and standalone ODD drives, respectively.

³¹⁴ Based on IDC's PC market analysis report produced by the defendants covering 2005Q4 through 2008Q2.

³¹⁵ Based on CRN's list of top computer products distributors in 2003 and SED International Holdings 10-K statements for fiscal years 2003 and 2004 converted to calendar year 2003.

³¹⁶ The TWICE Top 25 Computer Retailer's sold \$287,009 million dollars of computers and the total U.S. sales of Desktops and Laptops was \$333,438 million dollars according to IDC's PC Tracker over the period 2003-2009.

Table 25: Average Pass-Through Rate Calculations by Product and Sales Channel

Desktops						
Pass-through rates by sales channel segment¹						
Pass-through sales channel	Computer				Total pass-through rate²	Weight³
	Distributors	Makers	Distributors	Retailers		
Distributors->Computer Makers->Product Distributors->Retailers	102%	112%	102%	103%	100%	1.6%
Distributors->Computer Makers->Retailers	102%	112%		103%	100%	2.6%
Distributors->Computer Makers	102%	112%			100%	5.1%
Computer Makers->Product Distributors->Retailers		112%	102%	103%	100%	16.0%
Computer Makers->Retailers		112%		103%	100%	25.3%
Computer Makers		112%			100%	49.4%
Average					100%	100.0%
Weighted average					100%	
Laptops						
Pass-through rates by sales channel segment¹						
Pass-through sales channel	Computer				Total pass-through rate²	Weight³
	Distributors	Makers	Distributors	Retailers		
Distributors->Computer Makers->Product Distributors->Retailers	102%	106%	102%	104%	100%	1.6%
Distributors->Computer Makers->Retailers	102%	106%		104%	100%	2.6%
Distributors->Computer Makers	102%	106%			100%	5.1%
Computer Makers->Product Distributors->Retailers		106%	102%	104%	100%	16.0%
Computer Makers->Retailers		106%		104%	100%	25.3%
Computer Makers		106%			100%	49.4%
Average					100%	100.0%
Weighted average					100%	
Drives						
Pass-through rates by sales channel segment¹						
Pass-through sales channel	Computer				Total pass-through rate²	Weight³
	Distributors	Makers	Distributors	Retailers		
Distributors->Computer Makers->Product Distributors->Retailers	103%	88%	103%	109%	100%	1.6%
Distributors->Computer Makers->Retailers	103%	88%		109%	99%	2.5%
Distributors->Computer Makers	103%	88%			91%	5.0%
Computer Makers->Product Distributors->Retailers		88%	103%	109%	99%	15.8%
Computer Makers->Retailers		88%		109%	96%	24.8%
Computer Makers		88%			88%	48.5%
Retailer				109%	100%	1.8%
Direct to Consumer					N/A	0.02%
Average (excludes Direct to Consumer)					96%	100.0%
Weighted average (excludes Direct to Consumer)					93%	

Sources and Notes:

1. See **Exhibits 37C-E**. Equal to weighted average pass-through rates by sales channel segment.

2. The total pass-through rate for each channel equals the product of the pass-through rates for each segment of the channel. For example, the total pass-through rate for the uppermost channel for Desktops equals the Distributor rate (102%) x Computer Maker rate (112%) x Distributor rate (102%) x Retailer rate (96%) = 112%. I have been instructed by counsel to cap channel-level pass-through rates at 100%. This approach is conservative, as actual economic damages are based on rates that are not capped.

3. The weight for each channel is the share of total revenue that flows through that channel, which equals the product of the revenue shares that flow through each segment of the channel. See **Table 23**.

408. **Table 25** places these weighted pass-through rates into their corresponding segments of the desktop, laptop, and standalone ODD drives sales channels. The total pass-through rate for each sales channel is calculated as the product of its individual pass-through rates. These channel pass-through rates are combined using each channel's share of overall sales from **Table 23**. The resulting weighted desktop, laptop, and standalone ODD drive pass-through rates are combined using data from IDC PC Tracker and defendant data to derive an overall pass-through rate. This overall pass-through rate is applied to the overcharge caused by the conspiracy to determine the harm or damages to U.S. indirect purchasers.³¹⁷

VII. DETERMINATION OF THE VOLUME OF COMMERCE TO U.S. INDIRECT PURCHASERS

409. The determination of the volume of commerce attributable to U.S. indirect purchasers is a multi-step process. The first step is a determination of the revenues the defendants made from selling ODDs which were used by computer makers to manufacture computers, external optical drives, or were sold separately as computer system components. These products incorporating ODDs were sold to U.S. indirect purchasers. Because computers and external optical drives purchased by the class member can be assembled outside the U.S., it is important to examine all of the defendant worldwide sales. The principal sources I used in this report were the defendants' sales data produced in this litigation. These sales data were totaled by ODD type for the class period of recoverable harm, April 2003 through December 2008.³¹⁸ These totals are the worldwide revenues and units sold base. A very small portion of these sales were direct sales from the defendants to the final end users, for example people who bought items from a defendant's website. After these direct sales were removed, the remainder forms the worldwide indirect base.

410. The next step is to determine the U.S. indirect revenues and units sold base. To do this step, I used data from International Data Corporation [IDC], an American market analysis firm that covers information technology and other related areas. The IDC Worldwide PC Tracker shows a regional breakdown of computer sales by form factors, such as desktop or notebooks, and by more granular categories such as convertible notebooks, mini notebooks, mobile workstations, traditional notebooks, ultraslim notebooks, all-in-one desktops, workstations, and traditional desktop computers. The particular edition I used covers the period from 1995 through 2012. Since mini and ultraslim notebooks tend to not have ODDs, I excluded them—totaling the remaining units on a quarterly basis for the U.S. and the rest of the world for the period 2003Q2 through 2008Q4. I then computed each quarters' U.S. percentage of worldwide units and applied that percentage to the defendants' worldwide indirect unit base to determine the U.S. indirect unit base.

411. Because the evidence shows that raising ODD prices to Dell and HP was a major goal of the Defendants' collusive efforts, even on computers they manufactured outside the U.S.

³¹⁷ External drives as a proxy for standalone drive sales. Data are from PLDS, HLDS, Quanta, and TEAC

³¹⁸ The data were also totaled by customer: Dell, HP, and Other.

for sales to U.S. indirect purchasers, and because Dell and HP had such a large market shares inside the U.S., I used IDC reports the defendants produced as part of this litigation to examine Dell and HPs' market shares in the U.S. According to these reports, Dell and HP had U.S. market shares of 30.4% and 23.6% respectively during the conspiracy.³¹⁹ After adjusting the balance between Dell, HP, and Other to account for Dell and HPs' market shares in the U.S. units, I applied the monthly worldwide average sales prices to the U.S. indirect unit base to determine the revenue portion of the U.S. indirect base. The total U.S. indirect base is \$11.985 billion.

Table 26: U.S. Indirect ODD Revenues from Sales of ODDs and ODD Products in the U.S.

		<u>Apr 2003</u> <u>to Dec 2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>Total</u>
COMBO	Dell & HP	\$ 398,587,486	\$ 539,788,105	\$ 504,221,104	\$ 317,821,777	\$ 231,662,529	\$ 118,024,929	\$ 2,110,105,931
DVDROM	Dell & HP	\$ 130,691,568	\$ 214,325,114	\$ 170,000,589	\$ 121,443,437	\$ 115,523,835	\$ 102,315,833	\$ 854,300,376
DVDRW	Dell & HP	\$ 199,867,125	\$ 383,389,232	\$ 529,551,594	\$ 698,274,801	\$ 732,943,824	\$ 781,388,807	\$ 3,325,415,382
COMBO	Other	\$ 226,166,750	\$ 286,774,448	\$ 210,059,397	\$ 167,892,306	\$ 99,389,132	\$ 52,185,272	\$ 1,042,467,306
DVDROM	Other	\$ 124,695,820	\$ 183,754,218	\$ 144,004,410	\$ 99,724,473	\$ 86,589,433	\$ 66,421,496	\$ 705,189,849
DVDRW	Other	\$ 335,089,973	\$ 639,656,422	\$ 711,381,998	\$ 769,241,020	\$ 798,779,735	\$ 693,106,715	\$ 3,947,255,865
		<u>\$ 1,415,098,722</u>	<u>\$ 2,247,687,538</u>	<u>\$ 2,269,219,094</u>	<u>\$ 2,174,397,814</u>	<u>\$ 2,064,888,490</u>	<u>\$ 1,813,443,052</u>	<u>\$ 11,984,734,709</u>

VIII. DAMAGES TO CLASS MEMBERS

412. The same models and methods used to establish impact on the class of indirect purchasers of ODDs can also be used to produce a quantitative estimate of the economic harm to class members. I have been informed that only a portion of the true economic harm, the damages suffered by actual indirect purchasers during the class period can be recovered through litigation (this ignores the harm suffered by likely purchasers of ODD products who did not actually purchase the ODD products because of the price increase, and still suffered real economic harm as a consequence of being unable to buy the product, as they would have, at a lower price, as well as additional harm to actual purchasers of ODD equipment during the class period who purchased less equipment than they would have absent the elevation in price).

413. Determination of the legally recoverable harm caused to the U.S. indirect purchasers by the collusion among the defendants, requires multiple successive steps.

414. For the first step, I applied the measures of harm from my overcharge analysis on a monthly basis to the total U.S. indirect base, \$11.985 billion, to arrive at the total U.S. indirect overcharge for the period April 2003 to December 2008. The total U.S. indirect overcharge is \$2.503 billion.

³¹⁹ Reports covered the period from 2005Q4 to 2008Q2. Market share is in units as vendor specific revenues were not available in these reports. ODDCIV-000081080, HLDS_CIV2121299, HLDS_CIV0515876, and QUANTA_HAW_00034425. Quarterly market shares were used to adjust the share of ODDs destined for U.S. indirect purchasers of computer sold by Dell and HP.

Table 27: U.S. Indirect Overcharge

		Apr 2003 to Dec 2003		2004	2005	2006	2007	2008	Total						
COMBO	Dell & HP	\$	85,664,323	\$	111,245,944	\$	86,821,048	\$	49,892,017	\$	21,246,327	\$	-	\$	354,869,659
DVDROM	Dell & HP	\$	27,935,867	\$	39,132,661	\$	26,934,900	\$	14,089,646	\$	-	\$	-	\$	108,093,074
DVDRW	Dell & HP	\$	-	\$	110,370,338	\$	141,854,763	\$	148,831,997	\$	105,328,578	\$	81,596,928	\$	587,982,605
COMBO	Other	\$	76,102,470	\$	93,762,215	\$	59,252,066	\$	44,820,688	\$	21,859,434	\$	9,009,451	\$	304,806,325
DVDROM	Other	\$	42,630,341	\$	56,748,604	\$	40,633,196	\$	25,239,779	\$	17,094,134	\$	11,502,417	\$	193,848,471
DVDRW	Other	\$	114,510,149	\$	188,715,289	\$	201,162,928	\$	187,921,232	\$	162,282,249	\$	98,810,239	\$	953,402,086
		\$	346,843,151	\$	599,975,051	\$	556,658,901	\$	470,795,358	\$	327,810,723	\$	200,919,036	\$	2,503,002,220

415. As explained in my discussion of pass-through, much but not all of this U.S. total indirect overcharge, was passed through to the end users of these ODDs—the indirect purchasers. I measured this pass-through by examining sales channels for desktop and notebook computers and standalone ODDs sold as components or as externally attached ODD drives as shown in **Table 25** and in section VI. Applying this channel-weighted pass-through to the total U.S. indirect overcharge results in total U.S. damages amongst all indirect purchases of ODD in the U.S. of \$2.501 billion as shown in **Table 28**.³²⁰

Table 28: U.S. Indirect Damages

		Apr 2003 to Dec 2003		2004	2005	2006	2007	2008	Total						
COMBO	Dell & HP	\$	85,586,300	\$	111,144,622	\$	86,741,972	\$	49,846,576	\$	21,226,976	\$	-	\$	354,546,447
DVDROM	Dell & HP	\$	27,910,424	\$	39,097,019	\$	26,910,368	\$	14,076,813	\$	-	\$	-	\$	107,994,624
DVDRW	Dell & HP	\$	-	\$	110,269,813	\$	141,725,563	\$	148,696,442	\$	105,232,646	\$	81,522,611	\$	587,447,075
COMBO	Other	\$	76,033,157	\$	93,676,817	\$	59,198,100	\$	44,779,865	\$	21,839,525	\$	9,001,246	\$	304,528,710
DVDROM	Other	\$	42,591,514	\$	56,696,918	\$	40,596,188	\$	25,216,791	\$	17,078,565	\$	11,491,940	\$	193,671,915
DVDRW	Other	\$	114,405,854	\$	188,543,409	\$	200,979,710	\$	187,750,075	\$	162,134,444	\$	98,720,244	\$	952,533,736
		\$	346,527,249	\$	599,428,599	\$	556,151,901	\$	470,366,562	\$	327,512,156	\$	200,736,041	\$	2,500,722,508

416. I was directed to allocate this \$2.501 billion based on a legal distinction about the recoverability of harm to indirect purchasers as seen in **Exhibits 38A-D**. This allocation restricts damages to the states represented in this action and further limits damages to exclude government entities and public schools.

417. Based on this allocation, the portion of the economic harm that I am told is legally recoverable by consumers injured by the alleged collusive activity amounted to \$1.074 billion over the April 2003 to December 2008 class period. This is shown in the final row of **Exhibit 38A**. Note that in calculating these damages, I have conservatively not estimated any overcharges for unit types and time periods where estimated coefficients were not statistically significant.

* * *

³²⁰ Channel-weighted pass-through is approximately 99.91%

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed this 1st day of February 2017, at Austin, Texas.

By 
KENNETH FLAMM

EXHIBIT 1

CURRICULUM VITAE

KENNETH S. FLAMM

CURRENT POSITION

Professor and Dean Rusk Chair, University of Texas at Austin.

Fields of specialization: economic analysis of innovation in high technology industries; science and technology policy; international economics; technology modeling; applied econometrics; the computer, semiconductor, and internet industries; defense economics.

CURRENT RESEARCH

Determinants of innovation in semiconductors, computers, and telecommunications; economics of Internet use and deployment; the economic analysis of R&D, technology, and technology policy.

PREVIOUS POSITIONS

1995 to 1998, Senior Fellow, The Brookings Institution

1994 to 1995, Special Assistant to the Deputy Secretary of Defense (Dual Use Technology Policy) and Principal Deputy Assistant Secretary of Defense (Economic Security)

1993 to 1994, Acting Assistant Secretary of Defense (Economic Security), Principal Deputy Assistant Secretary of Defense and Special Assistant to the Under Secretary (Dual Use Technology Policy and International Programs)

1990 to 1998, Adjunct Professor, Department of Economics, The George Washington University.

1987 to 1993, Senior Fellow, The Brookings Institution.

1979 to 1987, Research Associate, The Brookings Institution.

1984 to 1989, Professorial Lecturer, Department of Economics, The George Washington University.

1979 to 1985, Assistant Professor, Department of Economics, University of Massachusetts, Amherst.

1979, Instructor of Economics, Clark University.

1978, Teaching Assistant, microeconomics, M.I.T.

1978, Economic Advisor, Directorate of Income Policy, Ministry of Finance and Public Credit, Mexico.

1977-78, Associate Professor, Department of Economics, Instituto Tecnológico Autónomo de México.

1976, Teaching Assistant, econometrics, M.I.T.

1975-76, Research Assistant, World Oil Model, Energy Laboratory, M.I.T.

EDUCATION Ph.D., Economics Massachusetts Institute of Technology, 1979
A.B. (Honors), Economics, Stanford University, 1973

HONORS
and AWARDS Danforth Graduate Fellowship (selected 1973)
Phi Beta Kappa (elected Junior year, 1972)
National Merit Scholar (selected 1969).
Myers Prize for Best Honors Thesis in Economics, Stanford University, (1973)
U.S. Department of Defense, Distinguished Public Service Medal, (awarded by Secretary of Defense, 1995)

MEMBERSHIPS

Senior Research Fellow, IC² Institute, The University of Texas at Austin.

Board on Science, Technology, and Economic Policy, National Research Council

Chair, Committee on Intangible Assets: Measuring and Enhancing Their Contribution to Corporate Value and Economic Growth, National Research Council

Vice Chair, Committee on Comparative Innovation Policy: Best Practice in National Technology Programs, National Research Council

Committee on the Rationale and Goals of the U.S. Civil Space Program, National Research Council

Committee on the Future of Supercomputing, National Academy of Sciences, Computer Science and Technology Board

Committee on Capitalizing on Science, Technology, and Innovation: An Assessment of the Small Business Innovation Program, National Academy of Sciences.

Steering Group on Measuring and Sustaining the New Economy, National Research Council

Chair, NATO Science Committee Panel for Science and Technology Policy and Organization.

Economics of Innovation and New Technology, Editorial Board.

Federal Networking Council Advisory Committee.

National Research Council Steering Group on Government-Industry Partnerships.

National Research Council Steering Group on Measuring and Sustaining the New Economy.

Roundtable on the Geo Economics of Military Preparedness, Council on Foreign Relations.

Study Group on Consolidation, Downsizing, and Conversion in the U.S. Military Industrial Base, Council on Foreign Relations.

Study Group on American Commercial Diplomacy in Asia, Council on Foreign Relations.

Study Group on Defense Industry Globalization, Conversion, and the Arms Trade, Council on Foreign Relations.

Study Group on Consolidation, Downsizing, and Conversion in the U.S. Military Industrial Base, Council on Foreign Relations.

Advisory Committee, Center for Innovation Policy Research, Budapest, Hungary.

Defense Science Board Task Force on International Arms Cooperation.

Defense Science Board 1995 Summer Study.

Advisory Panel on Information Technology and Research, Advisory Panel on Multinational Firms and the U.S. Technology Base, Office of Technology Assessment, U.S. Congress.

Panel on the Federal Role in the Commercialization of Technology, National Research Council.

Expert Advisory Panel, National Science Board Committee on Industrial Support for R&D.

National Science Foundation Advisory Committee on Data and Policy Analysis.

Expert Working Party on High Performance Computers and Communications, Organization for Economic Cooperation and Development.

Co-chair, Task Force on the Federal Role in Commercialization of New Technology; Member, Trade and Investment Advisory Committee, Council on Competitiveness.

Referee:

Quarterly Journal of Economics, Journal of Industrial Economics; Rand Journal of Economics; Review of Economics and Statistics, International Economic Journal; Research Policy; Journal of Development Economics; Journal of International Economics; Science; Growth and Change; International Organization; World Development, Telecommunications Policy, Structural Change and Economic Dynamics.

Consultant (Public Sector):

National Academy of Science; World Bank, Development Research, Industry Departments; U.S. Congress, Office of Technology Assessment; Latin American Economic System; Organization for Economic Cooperation and Development; U.S. Agency for International Development; U.S. Department of Justice; U.S. Department of Defense; Mexico, Ministry of Finance; International Growth Centre; Australia, Department of Communications.

Testimony before U.S. Congress, including Joint Economic Committee; Senate Governmental Affairs Committee; House Committee on Space, Science and Technology; House Subcommittee on Telecommunications; House Armed Services Committee; House Appropriations Committee; U.S. International Trade Commission; U.S. Department of Commerce; Federal Accounting Standards Advisory Board; Superior Court, San Francisco, California; Federal Courts: Eastern District of Pennsylvania, Western District of Texas, Eastern District of Texas, Northern District of California.

PERSONAL
DATA

Born: Rio de Janeiro, Brazil
Citizenship: United States

Complete fluency in Spanish; reading knowledge of French, Italian, Portuguese; elementary Japanese.

GRANTS AS PRINCIPAL, CO-PRINCIPAL INVESTIGA- TOR, LAST 12 YEARS	<p>Texas Connects Coalition & Technology for All, "Digital Inclusion," 2012-2013</p> <p>National Science Foundation, "Modeling Pharmaceutical Innovation Pipelines," 2010-2012</p> <p>National Science Foundation, "Modeling Innovation Chains Using Case-Based Econometrics: Nano-electronics and Biotechnology Applications," 2008-2012</p> <p>Congressional Research Service, Library of Congress, "Winning the Globalization Game: How Countries Compete in the 21st Century," 2007-2008</p> <p>"Semiconductor Industry Economics," Kauffman Foundation, 2006-2008.</p> <p>Congressional Research Service, Library of Congress, "Changing Modes of Defense Procurement: Implications for Pricing and Innovation in the US Defense Industry," 2005-2006.</p> <p>National Science Foundation, "Internet Use in the Americas," 2004-2006.</p> <p>Ford Foundation, Hewlett Foundation, "An Experiment in Cooperative Policy Research: Normalizing Inter-American Relations with Cuba," 2003-2006.</p> <p>Congressional Research Service, Library of Congress, "Broadband Policy in Comparative International Perspective," 2004-2005.</p> <p>Rockefeller Foundation, "Researching the Economic Implications of Fair Use," 2002-2004.</p> <p>Congressional Research Service, Library of Congress, "Exploring the Digital Divide: Regional Differences in Patterns of Internet Use in the United States," 2003-2004.</p> <p>SEMATECH International, "Improving Semiconductor Industry Models," 2002-2003.</p> <p>Congressional Research Services, Library of Congress, "Internet Use in Developing and Industrializing Countries," 2002-2003.</p>
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Pew Internet and American Life Project, "Determinants of Internet Use by US Households," 2002-2003.

PUBLICATIONS

Books:

(with S. Nagaoka, M. Kondo, and C. Wessner, Eds.), 21st Century Innovation Systems for Japan and the United States: Lessons from a Decade of Change, (Washington: National Academies Press), 2009.

(with others), Committee on the Rationale and Goals of the U.S. Civil Space Program), America's Future in Space: Aligning the Civil Space Program with National Needs, (Washington: National Academies Press), 2009.

(with others), Committee on the National Defense Stockpile, National Research Council, Managing Materials for a 21st Century Military, (Washington: National Academies Press), 2007.

(with others), Committee on the Future of Supercomputing, National Research Council, Getting Up to Speed: The Future of Supercomputing, (Washington: National Academies Press), 2004.

Mismanaged Trade? Strategic Policy and the Semiconductor Industry, (Washington: Brookings Institution), 1996.

Changing the Rules: Technological Change, International Competition and Regulation in Communications, (with Robert Crandall, ed.), (Washington: Brookings Institution), 1989.

Creating the Computer: Government, Industry, and High Technology, (Washington: Brookings Institution), 1988.

Targeting the Computer: Government Support and International Competition, (Washington: Brookings Institution), 1987.

(with J. Grunwald), The Global Factory: Foreign Assembly in International Trade, (Washington: Brookings Institution), 1985.

(with M. Bishop and R. Davenport), A Definitional Study of the Private Sector in Guyana, (Georgetown, Guyana: USAID), 1982.

Articles:

(with P. Mudliar and S. Strover), “Outside Looking In: Shaping Access and Use of PCCs,” in G. Marsden and J. May, Ed., Proceedings of the Sixth International Conference on Information and Communications Technologies and Development: Notes - Volume 2, (New York: Association for Computing Machinery), 2014.

“Measuring Disconnectedness: Understanding US. Broadband Unavailability,” in R. Taylor and A. Schejter, Ed., Beyond Broadband Access, (New York: Fordham University Press), 2013.

“Economic Impacts of International R&D Coordination: SEMATECH and the International Technology Roadmap,” in Nagaoka, et. al., 21st Century Innovation Systems for Japan and the United States, (Washington: National Academies Press), 2009.

(with S. Nagaoka), “The Chrysanthemum Meets the Eagle—The Coevolution of Innovation Policies in Japan and the United States,” in Nagaoka, et. al., 21st Century Innovation Systems for Japan and the United States, (Washington: National Academies Press), 2009.

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(with A. Chaudhuri and Associates) “The Internet, the Government, and E-Governance,” in P. Hernon, Ed., Comparative Perspectives on E-Government: Serving Today and Building for Tomorrow, (Boston: Scarecrow Press), 2006.

(with A. Chaudhuri) “Is A Computer Worth a Thousand Books? Internet Access and the Changing Role of Public Libraries,” Review of Policy Research, vol. 23, no. 1, 2006.

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“Post-Cold War Policy and the U.S. Defense Industrial Base,” in The Bridge (National Academy of Engineering), vol. 35, no. 1, 2005.

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“SEMATECH Evolving: A New Model for Global Industrial R&D Coordination,” IEEE Design and Test of Computers, November-December 2003 (invited submission).

“Microelectronics Innovation: Understanding Moore’s Law and Semiconductor Price Trends,” International Journal of Technology, Policy, and Management, vol. 3, no. 2, 2003.

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"Forward Pricing vs. Fair Value: An Analytical Assessment of Dumping in DRAMs," in T. Ito and A. Krueger, Ed., Trade and Protectionism, (Chicago: University of Chicago Press and NBER, 1993).

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"Technological Advance and Costs: Computers Versus Communications," in Crandall and Flamm, Eds., Changing the Rules: Technological Change, International Competition, and Regulation in Communications, (Washington: Brookings Institution), 1989.

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(with S. Strover and Y. Sang), "Public Computing Centers: Beyond 'Public' and 'Computing'," presented at Telecommunications Policy Research Conference, September 2013, Arlington, VA, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2241173.

"Federal Subsidies and Broadband Competition," presented at TPRC 43, Arlington, VA, September 2015, available at

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587353 ; previous versions presented at NBER Summer Institute 2013 Economics of IT and Digitization Workshop, Cambridge, MA, July 2013, available at <http://conference.nber.org/confer/2013/SI2013/PRIT/Flamm.pdf>; "Connectedness and Competition: Determinants of Service Provision in U.S. Broadband Markets," presented at Telecommunications Policy Research Conference, September 2011, Arlington, VA, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1985791.

"A Tale of Two Standards: Patent Pools and Innovation in the Optical Disk Drive Industry," **National Bureau of Economic Research Working Paper 18931**, March 2013, available at SSRN: <http://ssrn.com/abstract=2245440>, currently under revision.

"Correlates of Quality Improvement in U.S. Broadband Service," presented at TPRC 42, the 42nd Research Conference on Communication, Information, and Internet Policy, Arlington, VA, September 2014, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2418746 ; previous versions are "Dynamics of Change in Service Quality on US Broadband Networks: An Exploratory Study," presented at NBER Summer Institute Workshop on the Economics of IT and Digitization, July 2012; Telecommunications Policy Research Conference, September 2012, Arlington, VA, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2031220; currently under revision.

"Causes and Economic Consequences of Diminishing Rates of Technical Innovation in the Semiconductor and Computer Industries," presented at APPAM Fall Research Conference, Albuquerque, NM, November 6, 2014, <https://appam.confex.com/appam/2014/webprogram/Paper9969.html>; previous version was "The Microeconomics of Microprocessor Innovation," presented at NBER Summer Institute- Productivity Potpourri Workshop, July 2007, available at <http://users.nber.org/~confer/2007/si2007/PRB/flamm.pdf> ; currently under revision.

Other Publications and Reports:

(with M. Naaman) "Sub-Regressions In Antitrust Class Cert. Can Be Unreliable," Law360, December 17, 2014, available at <http://www.law360.com/articles/604821/sub-regressions-in-antitrustclass-cert-can-be-unreliable> .

"Coping with Globalization in Semiconductors," World Politics Review, June 15, 2010, available at <http://www.worldpoliticsreview.com/articles/5795/coping-with-globalization-in-semiconductors> .

(with S. Nagaoka), "The Chrysanthemum Meets the Eagle," Issues in Science and Technology, Fall 2007.

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"Moore's Law and the Economics of Leading Edge Semiconductors," Hitotsubashi University Institute for Innovation Research Working Paper WP#05-05, December 2004.

(with F. Weingarten) "The Economics of Fair Use and the Public Domain," Report Submitted to the Rockefeller Foundation, May 2004.

"New Economy Lite," in Issues in Science and Technology, Winter 2003

(with A. Aizcorbe and A. Kurshid), "The Role of Semiconductor Inputs in IT Hardware Price Decline: Computers vs. Communications," Federal Reserve Finance and Economics Discussion Paper 2002-37, (Washington: Board of Governors, The Federal Reserve Board), August, 2002.

"Failures of Defense Industrial Policy Reform and Likely Consequences for the Bush Defense Build-up," commissioned by Council on Foreign Relations, (March, 2002) available at http://www.cfr.org/public/GeoEcon_Military/index.html.

"U.S. Defense Industry in the Post-Cold War: Economic Pressures and Security Dilemmas," in Judith Reppy, Ed. The Place of Defense Industry in National Systems of Innovation, Occasional Paper #25, Cornell University Peace Studies Program, (Ithaca, NY: Cornell University Peace Studies Program), April 2000.

"Shaping science policy," Issues in Science and Technology, vol. XVI, No. 3, Spring 2000.

"Are New Global Rules Needed for High-Tech?," in A. Teich, S. Nelson, C. McEnaney, and S. Lita, Ed., AAAS Science and Technology Policy Yearbook 2000, (Washington: American Association for the Advancement of Science), 2000.

"Capital Markets and New Technologies: Introduction," in Charles W. Wessner, Ed., The Advanced Technology Program, Challenges and Opportunities, (Washington: National Academy Press), 1999.

"Discussion of The Government as Venture Capitalist," in Charles W.

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“Discussion of Technology Transfer and the National Laboratories,” in Charles W. Wessner, Ed., Industry-Laboratory Partnerships, A Review of the Sandia Science and Technology Park Initiative, (Washington: National Research Council), 1999.

“R&D in the Framework of the New Transatlantic Agenda,” in Charles W. Wessner, Ed., New Vistas in Transatlantic Science and Technology Cooperation, (Washington: National Research Council), 1999.

(with E. Lincoln), “Reinvigorating APEC,” in The International Economy, Vol. XII, No. 1, January-February 1998.

“An Economic Strategy to Control Arms Proliferation,” Issues in Science and Technology, Vol. XIV, No.2, Winter 1997-1998.

More for Less: The Economic Impact of Semiconductors, (San Jose: Semiconductor Industry Association), December 1997.

(with E. Lincoln), Time to Reinvent APEC, Brookings Policy Brief No. 26, (Washington: Brookings Institution), November 1997.

Deciphering the Cryptography Debate, Brookings Policy Brief No. 21, (Washington: Brookings Institution), July 1997.

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International Armaments Cooperation in an Era of Coalition Security, (with others), Task Force on International Armaments Cooperation, Defense Science Board, Office of the Undersecretary of Defense (Acquisition and Technology), (Washington: Department of Defense), August, 1996.

Assessment of DoD Source Code Export Practices, (with others), Task Force on International Armaments Cooperation, Defense Science Board, Office of the Undersecretary of Defense (Acquisition and Technology), (Washington: Department of Defense), August, 1996.

“Semiconductors and Managed Trade,” The Brookings Review, Summer 1996.

"Controlling the Uncontrollable: Reforming U.S. Export Controls on Computers," The Brookings Review, Winter 1996.

"In Defense of the Flat-Panel Display Initiative," Issues in Science and Technology, Spring 1995.

"Flat-Panel Displays: Catalyzing a U.S. Industry," Issues in Science and Technology, Fall 1994.

"Rules of the Game are Changing—Again." Think, No. 2, Spring 1991.

"Making New Rules: High-Tech Trade Friction and the Semiconductor Industry," Brookings Review, Spring 1991.

"Review: Martin Campbell-Kelly, ICL: A Business and Technical History," Annals of the History of Computing, vol. 13, no. 1, 1991.

"Cooperation and Competition in the Global Computer Industry," prepared for the OECD, Directorate for Science and Industry, Paris, 1991.

"A Global View of Competition," Issues in Science and Technology, vol. 7, no. 2, Winter 1990-91.

"Patterns of Growth in the International Electronics Industry: Implications for Sectoral Strategy in Developing Countries," report for the World Bank, 1990.

"Strategic Aspects of Semiconductor Trade Policy," Research Institute of International Trade and Industry Working Paper No. 90-DOF-7, Ministry of International Trade and Industry, Japan, January 1990.

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"The Computer Industry in Industrialized Economies: Lessons for the Newly Industrializing," World Bank, Industry and Energy Department Working Paper, Industry Series Paper No. 8, February 1989.

"Politics and Policy in the International Semiconductor Industry," in SEMI Twelfth Annual Information Services Seminar, (Mountain View: Semiconductor Equipment and Materials Institute), 1989.

"International Differences in Industrial Robot Use: Trends, Puzzles, and Possible Implications for Developing Countries," World Bank, Development Research Department Discussion Paper DRD185, July 1986.

EXHIBIT 2

Dr. Kenneth Flamm

Testimony at Trial or Deposition, Last Four Years

A: Antitrust; P: Patents and IP; T: Trade

Optical Disk Drive Antitrust Litigation, (N.D. Cal. 2010)

Retained by indirect purchaser plaintiffs, provided expert advice, wrote reports, testified at deposition.

(A)

State of Oregon v. AU Optronics Corporation et. al., (N.D. Cal. 2010)

Retained by Oregon Attorney General, provided expert advice, testified at deposition. (A)

Skold and Dossantos v. Intel Corporation, Hewlett Packard Company and Does 1-50, (California, Santa Clara County Superior Court, 2005)

Retained by counsel for plaintiffs, provided expert advice, testified at deposition. (A)

State of Washington vs. A.U. Optronics et. al., (Washington, King County Superior Court, 2010)

Retained by Washington Attorney General, provided expert advice, wrote report, testified at deposition.

(A)

State of Illinois vs. A. U. Optronics et. al., (Illinois, Cook County Circuit Court, 2010)

Retained by Illinois Attorney General, provided expert advice, wrote reports, testified at deposition. (A)

In the Matter of Certain Silicon-On-Insulator Wafers, (U.S. International Trade Commission Investigation No. 337-TA-3083, 2015)

Retained by counsel for Soitec, provided expert advice, wrote reports, testified at deposition. (P, T)

EXHIBIT 3

MATERIALS RELIED UPON

“The hows and whys of optical proliferation. (interview with Carl M. Rodia),” Tape Disc Business, vol. 10, no. 12, December 1995.

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Appendix3 Game Console Market.doc

Apple support at <https://www.apple.com/support/>

Arin C. Aragona's Letter to Shana E. Scarlett, dated Mar. 11, 2013

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Attachment to Email from Kimyatta McClary to Shana Scarlett, dated May 10, 2013

Australia National Currency per U.S. Dollar, period average - International Financial Statistics (IFS) - International Monetary Fund

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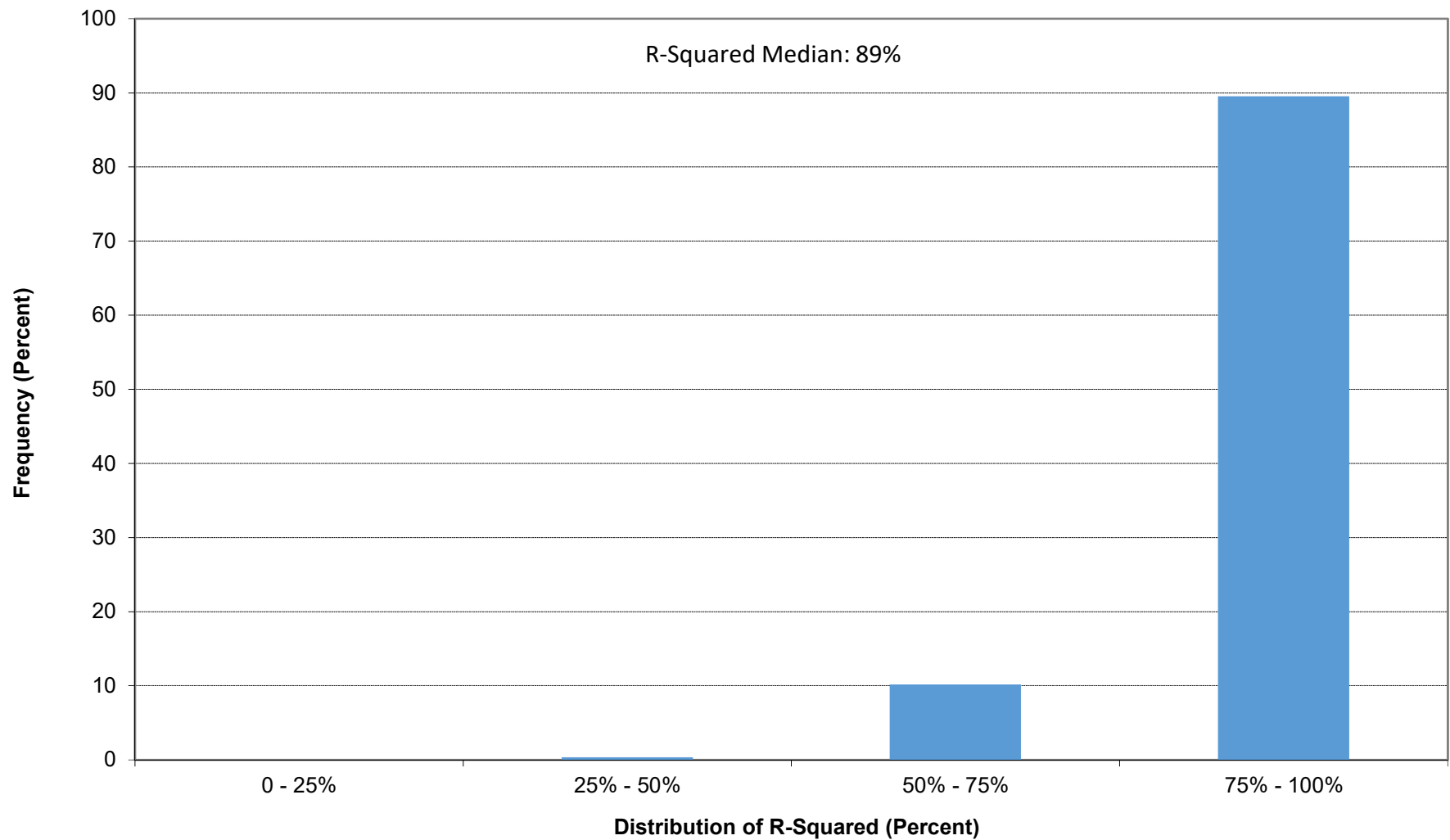
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Exhibit 4
Frequency Distribution of R-Squared from Hedonic Regressions by Drive Type and Month



Sources: Defendant Data. See R2_Code.do.

Exhibit 5
Retail Store Types and “Top 25” Companies Considered in Pass-Through Studies

TWICE Store Type	Included Companies	Company Share of Top 25	Store Type Share of Top 25
Electronics/Appliance Stores/Multi-Regional	Best Buy, Fry’s	27.2%	27.3%
Consumer Direct/Internet Shopping/Mail Order	Dell, HP, Newegg, Amazon, CDW	21.3%	23.8%
Mass Merchants	Walmart, Sears	9.8%	12.4%
Home Office Stores	Office Depot, OfficeMax	5.6%	8.9%
Computer Stores	CompUSA, Micro Center	6.8%	8.2%
Warehouse Clubs	Costco	1.8%	3.6%
	Share of Total “Top 25” Retailer Sales	72.5%	84.2%

Sources and Notes:

1. TWICE Top 25 PC Retailer Lists, 2003-2008

Exhibit 6
Sales Comparison Between Sources

Sales (\$M)	2003	2004	2005	2006	2007	2008	2009	Total
Datamonitor Computer Hardware		\$46,569.3	\$50,096.2	\$53,497.2	\$57,267.1	\$59,677.5	\$63,283.8	\$330,391.1
IDC PC Tracker	\$ 42,011.7	\$42,536.2	\$45,225.3	\$49,694.2	\$53,415.2	\$51,573.6	\$48,981.6	\$333,437.7
TWICE Top 25 PC Retailers	\$ 39,134.0	\$ 33,563.0	\$ 36,940.0	\$ 39,355.0	\$ 46,068.0	\$ 44,811.0	\$ 47,138.0	\$287,009.0
Top 25 as Share of DM Total		72.1%	73.7%	73.6%	80.4%	75.1%	74.5%	75.0%
Top 25 as Share of IDC Total	93.2%	78.9%	81.7%	79.2%	86.2%	86.9%	96.2%	86.1%

Definitions

Datamonitor Computer Hardware: Includes Computers (desktops and laptops), Storage Devices (such as memory sticks, CD packs, hard disks, and other data storage devices), and Peripherals and Devices (computer peripherals, PDAs, organizers, calculators, and Satellite navigation systems)

IDC PC Tracker: Includes Portable PCs and Desktop PCs

TWICE Top 25 PC Retailers: Includes notebook and desktop PCs and monitors; hardware such as hard drives, keyboards, PC cards and mice; external drives; printers; digital cameras; and software and peripheral accessories

Exhibit 7
CRN-Reported Top Computer Products Distributors in 2003

Distributor	Sales (\$ billions)	Share	Pass-Through Studied	Share Studied
Ingram Micro	\$22.6	36.8%	Yes	36.8%
Tech Data	\$17.4	28.3%		-
Avnet	\$4.3	7.0%		-
Synnex	\$4.1	6.7%	Yes	6.7%
Arrow Computer Products	\$2.6	4.2%		-
Bell Microproducts	\$2.2	3.6%		-
GE Access	\$1.9	3.1%		-
Westcon Group	\$1.8	2.9%		-
Agilysys	\$1.3	2.1%		-
D&H Distributing	\$1.2	1.9%		-
Scansource	\$1.1	1.7%		-
ASI	\$1.0	1.6%	Yes	1.6%
Total	\$61.4	100.0%		45.1%

Note: Includes distributors with more than \$1 billion in sales.

Source: <http://www.crn.com/news/channel-programs/18842480/top-computer-products-distributors.htm>

Exhibit 8
Toshiba Components by Model, 2007

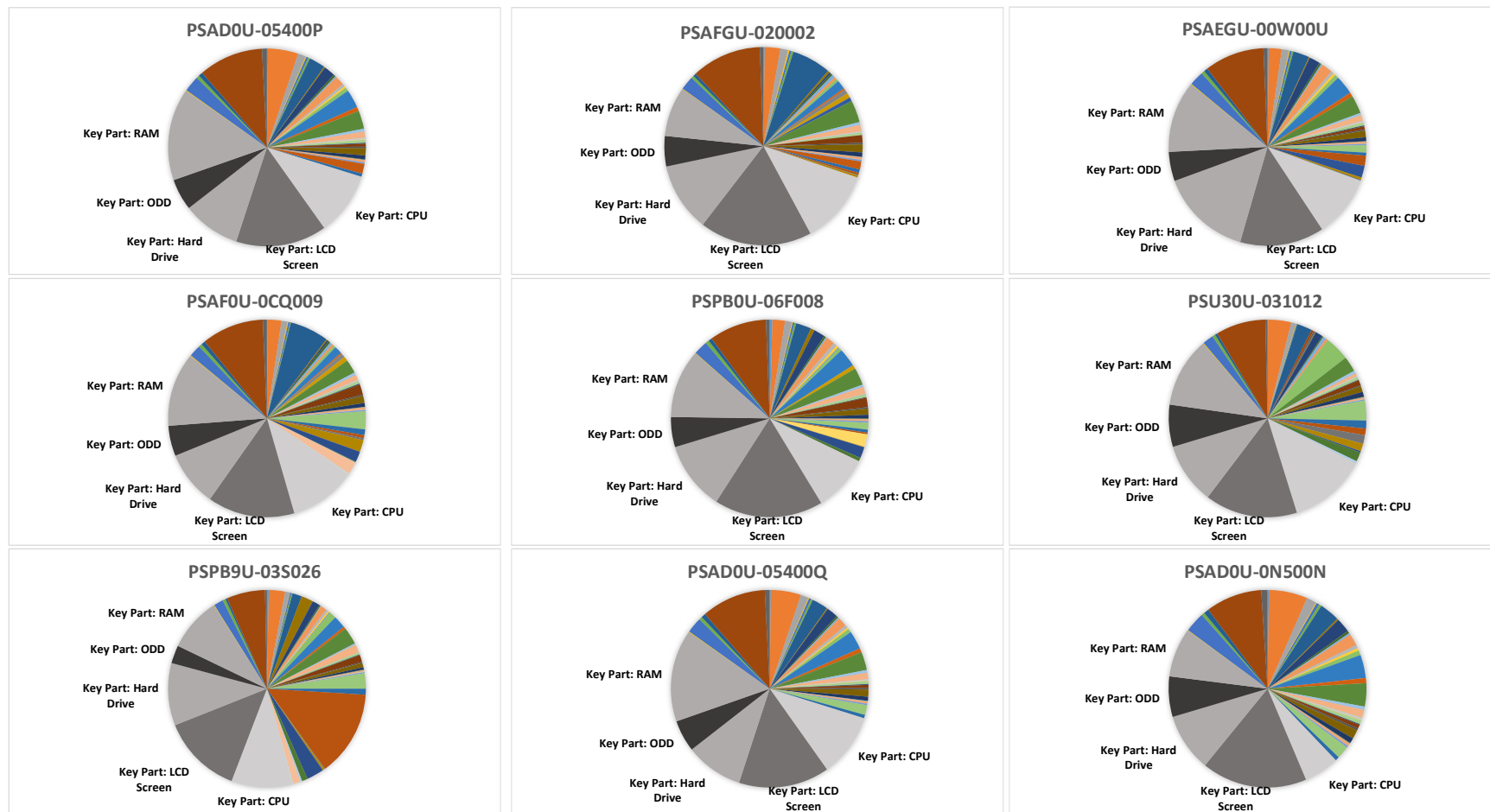
A black and white photograph of a large, multi-story building with a grid-like facade, likely a government or institutional structure. The building has many windows and a prominent central section. The image is somewhat grainy and has a high-contrast, almost stencil-like appearance.

(Continued on next page)

Exhibit 8
Toshiba Components by Model, 2007
(Continued from previous page)

A black and white photograph of a large, multi-story building with a grid-like facade of windows. The building is viewed from a low angle, looking up. The sky is dark and cloudy. The building has a prominent central section with a slightly different facade.

Exhibit 9
"Key Parts" Share of Computer Costs for Other 2007 Models



Source: T-ODD-00000545.

Exhibit 10: Simulated Effect of Measurement Error on Passthrough Estimates

Pass Through Coefficient Simulation with Measurement Error, 945 replications		
True coefficient=1.0	Transactional Level Data	Monthly Level Data
Mean	0.031	0.463
Standard Deviation	0.008	0.056
Minimum	0.0071	0.209
Maximum	0.0578	0.660
Positive	100.0%	100.0%
Positive & significant	94.8%	99.9%
Negative	0.0%	0.0%
Negative & Significant	0.0%	0.0%

Exhibit 11A
 HP Price Point and Quality Over Time
 Improvements in HP/Compaq Presario Laptop Models First Sold at \$449.99 Price Point at Best Buy

Product Name	C304NR	C571NR	C714NR	C762NR
Month Introduced	September 2006	June 2007	September 2007	April 2008
Intel Microprocessor	1.6 GHz Intel® Celeron® M Processor 420	1.73 GHz Intel® Pentium® Dual Core processor T2080 ¹	1.46 GHz Intel Pentium dual core processor T2310 ¹	1.73 GHz Pentium Dual-Core Mobile Processor T2370
Microprocessor Cache	1MB L2 Cache	1 MB L2 Cache	1 MB L2 cache	1 MB L2 Cache
Memory	512MB DDR2 System Memory (2 Dimm)	1024 MB DDR2 System Memory (2 Dimm)	1024 MB DDR2 (2 Dimm)	1024 MB
Video Graphics	Intel Graphics Media Accelerator 950	Intel Graphics Media Accelerator 950 (shared)	Intel Graphics Media Accelerator X3100 (shared)	Intel Graphics Media Accelerator X3100
Hard Drive	80GB 5400RPM (SATA)	80 GB (5400 RPM) Hard Drive (SATA)	120 GB (5400 RPM) Hard Drive (SATA)	160 GB (5400 rpm)
Multimedia Drive	24X DVD/CD-RW Combo Drive	Super Multi 8X DVD±R/RW with Double Layer Support	Super Multi 8X DVD±R/RW with Double Layer Support	LightScribe Super Multi 8X DVD±R/RW with Double Layer Support
Display	15.4" WXGA High-Definition BrightView Widescreen (1280 x 800) Display	15.4" WXGA High-Definition BrightView Widescreen (1280 x 800) Display	15.4" WXGA High-Definition BrightView Widescreen (1280 x 800) Display	15.4" WXGA High-Definition BrightView Widescreen (1280 x 800)

Green Shading = Performance Improvement

Source: BBODD0000002-11, BestBuy_PricePoints-Merits.do. HP support at <http://h20565.www2.hp.com/portal/site/hpsc/public/kb/search/>

Notes:

1) t2310 is higher performance than t2080. See http://www.cpu-world.com/Compare/469/Intel_Pentium_Dual-Core_Mobile_T2080_vs_Intel_Pentium_Dual-Core_Mobile_T2310.html

Exhibit 11B

HP Price Point and Quality Over Time

Improvements in HP/Compaq Presario Laptop Models First Sold at \$399.99 Price Point at Best Buy

Product Name	C509NR	C551NR	C713NR	CQ60-417DX
Month Introduced	February 2007	April 2007	November 2007	June 2009
Intel Microprocessor	1.86 GHz Intel® Celeron® M Processor 440	1.86 GHz Intel® Celeron® M Processor 440	1.46 GHz Intel Pentium dual core processor T2310	2.20 GHz Intel Celeron Processor 900 ¹
Memory	512MB DDR2 System Memory (1 Dimm)	512MB DDR2 System Memory (1 Dimm)	1024MB (2 x 512 MB)	3072MB
Hard Drive	80GB 5400RPM (SATA)	80GB (5400RPM) Hard Drive (SATA)	80 GB (5400 rpm)	160GB (5400RPM)
Multimedia Drive	Super Multi 8X DVD±R/RW with Double Layer Support	24X DVD/CD-RW Combo Drive	Super Multi 8X DVD±R/RW with Double Layer Support	LightScribe SuperMulti 8X DVD±R/RW with Double Layer Support
Display	15.4" WXGA High Definition BrightView Widescreen (1280 x 800) Display	15.4" WXGA High Definition BrightView Widescreen (1280 x 800) Display	15.4" WXGA High Definition BrightView Widescreen (1280 x 800) Display	15.6" Diagonal High Definition HP BrightView Display (1366x768)

Green Shading = Performance Improvement.

Yellow Shading = Ambiguous Change in Performance.

Orange Shading = Performance Decline.

Source: BBODD0000002-11, BestBuy_PricePoints-Merits.do. HP support at <http://h20565.www2.hp.com/portal/site/hpsc/public/kb/search/>

Notes:

1) CPU unit is reported to have a better single thread performance, but a worse multithread performance.

Exhibit 12A
 Apple Price Point and Quality Over Time
 Improvements in Apple Desktop Models First Sold at \$1299 Price Point

Product Name	M9248LL/A	M9843LL/A	MA063LL/A
Month Introduced	August 2004	May 2005	September 2005
Intel Microprocessor	1.6GHz PowerPC G5	1.8 GHz G5 (single)	1.9GHz PowerPC G5
Memory	256MB PC3200 (400MHz) DDR SDRAM, supports up to 2GB	512MB 2 SDRAM (184 pin) PC3200-DDR400, supports up to 2GB	512MB of 533MHz DDR2 SDRAM (PC2-4200), supports up to 2.5GB
Hard Drive	80GB Serial ATA; 7200 rpm	160 GB	160GB Serial ATA1; 7200 rpm
Multimedia Drive	Slot-loading Combo Drive (DVD-ROM/CD-RW)	Slot-loading Combo Drive (DVD-ROM/CD-RW)	Slot-loading 8x SuperDrive (DVD+R DL/DVD±RW/CD-RW)
Display	17-inch (viewable) widescreen TFT active-matrix LCD, 1440 x 900 pixels, millions of colors	17-inch (viewable) widescreen TFT active-matrix LCD, 1440 x 900 pixels, millions of colors	17-inch (viewable) widescreen TFT active-matrix LCD, 1440 x 900 pixels, millions of colors

Green Shading = Performance Improvement.

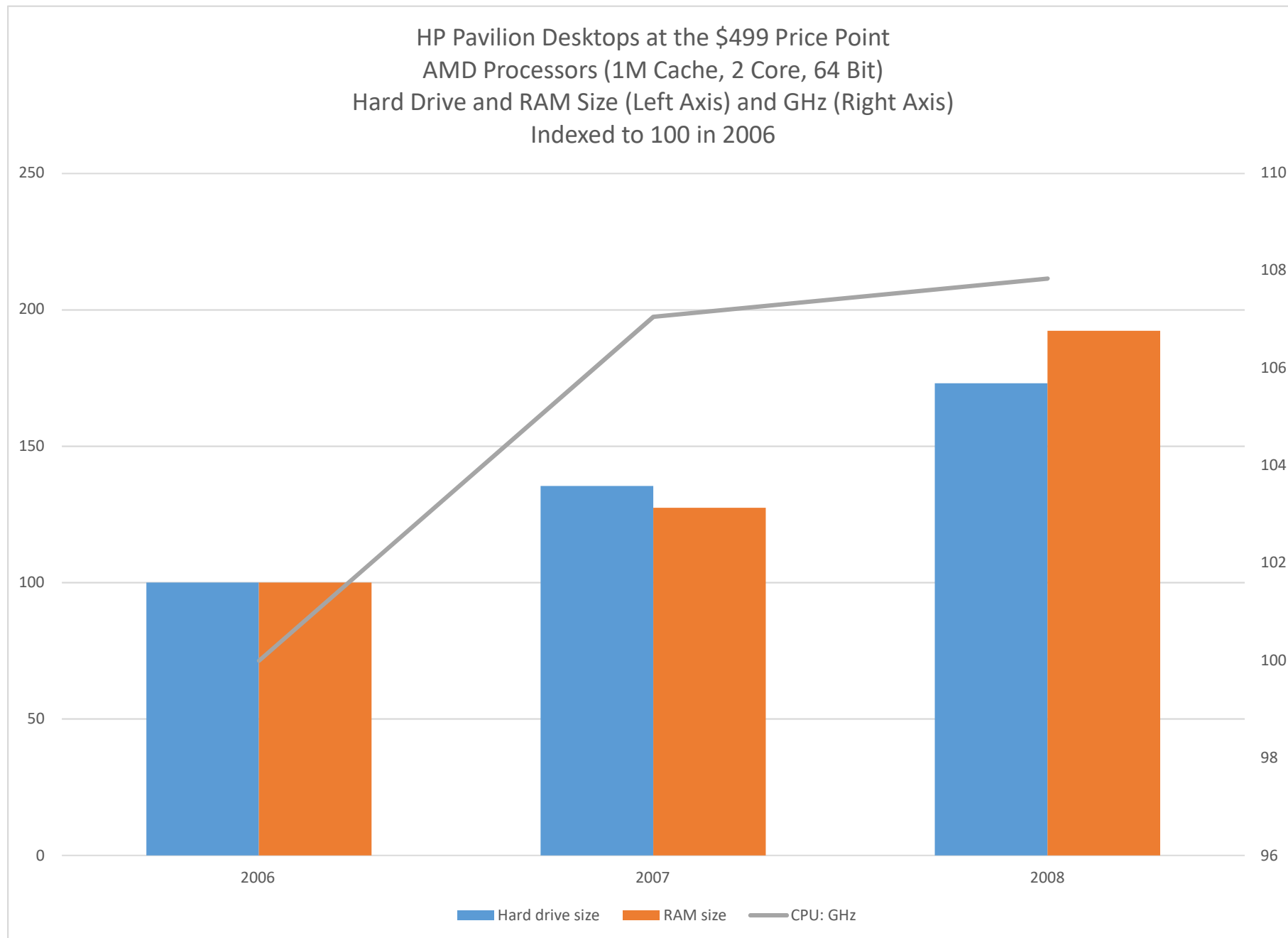
Sources: Declaration of Mark Buckley of Apple Inc., 9/26/2013, Appendix D.
 Apple support at <https://www.apple.com/support/>.

Exhibit 12B
 Apple Price Point and Quality Over Time
 Improvements in Apple MacBook Models First Sold at \$1299 Price Point

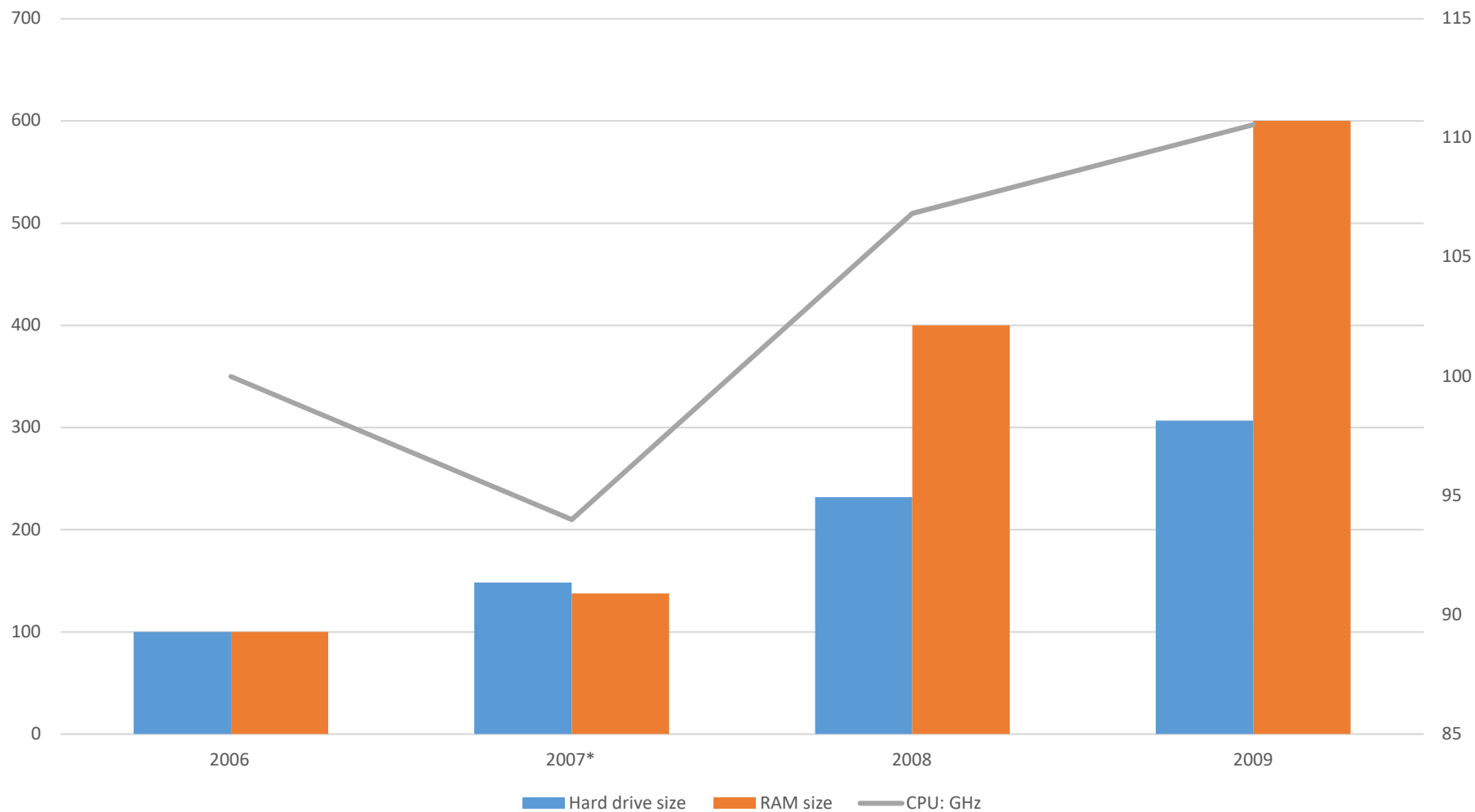
Product Name	MA255LL/a	MA700LL/A	MB062LL/A	MB062LL/B	MB403LL/A	MB404LL/A	MB467II/a
Month Introduced	May 2006	November 2006	May 2007	November 2007	February 2008	October 2008	June 2009
Intel Microprocessor	2GHz Intel Core Duo	2.0GHz Intel Core 2 Duo	2.16GHz Intel Core 2 Duo	2.2GHz Intel Core 2 Duo	2.4GHz Intel Core 2 Duo	2.4GHz Intel Core 2 Duo	2.4GHz Intel Core 2 Duo
Memory	512MB of 667MHz DDR2 SDRAM (PC2-5300) on two SO-DIMMs, supports up to 2GB	1GB (2x512MB) of 667MHz DDR2 SDRAM (PC2-5300); supports up to 2GB	1GB (two 512MB) of 667MHz DDR2 SDRAM (PC2-5300); supports up to 2GB	1GB (two 512MB) of 667MHz DDR2 SDRAM (PC2-5300); supports up to 4GB	2GB (two 1GB) of 667MHz DDR2 SDRAM (PC2-5300); supports up to 4GB	2GB (two 1GB) of 667MHz DDR2 SDRAM (PC2-5300); supports up to 4GB	2GB (two 1GB SO-DIMMs) of 1066MHz DDR3 SDRAM (PC3-8500); supports up to 4GB
Hard Drive	60GB 5400-rpm Serial ATA	80GB Serial ATA; 5400-rpm	120GB Serial ATA; 5400 rpm	120GB Serial ATA; 5400 rpm	160GB Serial ATA; 5400 rpm	250GB Serial ATA; 5400 rpm	250GB Serial ATA; 5400 rpm
Multimedia Drive	Slot-loading SuperDrive (DVD±RW/CD-RW)	6x SuperDrive (DVD+R DL/DVD±RW/CD-RW)	8x SuperDrive (DVD+R DL/DVD±RW/CD-RW)	8x SuperDrive (DVD±R DL/DVD±RW/CD-RW)	8x SuperDrive (DVD±R DL/DVD±RW/CD-RW)	8x SuperDrive (DVD±R DL/DVD±RW/CD-RW)	8x SuperDrive (DVD±R DL/DVD±RW/CD-RW)
Display	13.3-inch (diagonal) glossy TFT widescreen display, 1280 x 800 resolution	13.3-inch (diagonal) glossy TFT widescreen display, 1280 by 800 resolution	13.3-inch (diagonal) glossy TFT widescreen display, 1280 by 800 resolution	13.3-inch (diagonal) glossy TFT widescreen display, 1280 by 800 resolution	13.3-inch (diagonal) glossy TFT widescreen display, 1280 by 800 resolution	13.3-inch (diagonal) glossy TFT widescreen display, 1280 by 800 resolution	13.3-inch (diagonal) LED-backlit glossy widescreen display, 1280-by-800 resolution

Green Shading = Performance Improvement.

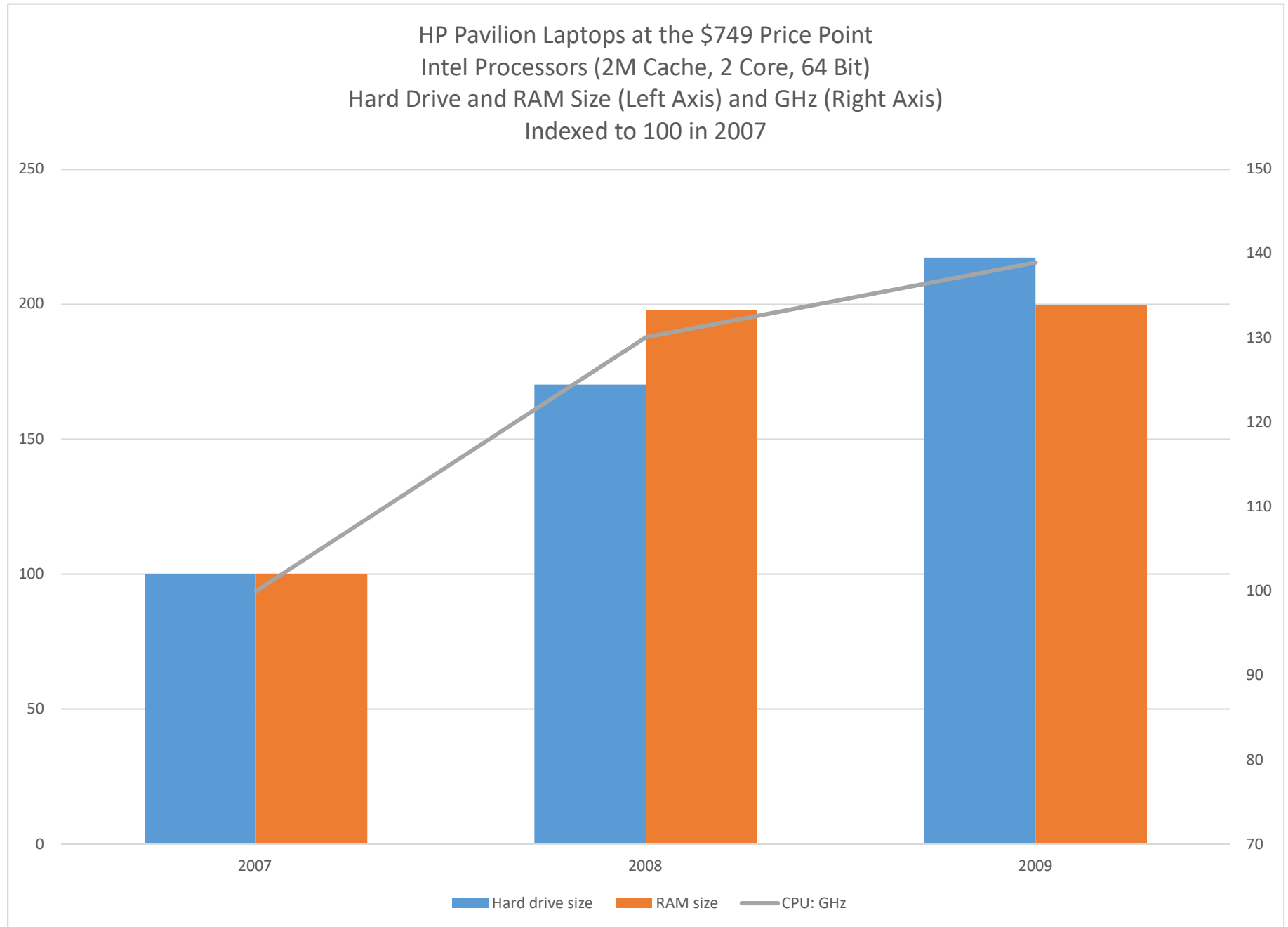
Sources: Declaration of Mark Buckley of Apple Inc., 9/26/2013, Appendix D.
 Apple support at <https://www.apple.com/support/>.



HP Pavilion Desktops at the \$499 Price Point
Intel Processors (2M Cache, 2 Core, 64 Bit)
Hard Drive and RAM Size (Left Axis) and GHz (Right Axis)
Indexed to 100 in 2006



* Decline in GHz between 2006 and 2007 reflects shift by Intel from P4 architecture to C2D architecture.



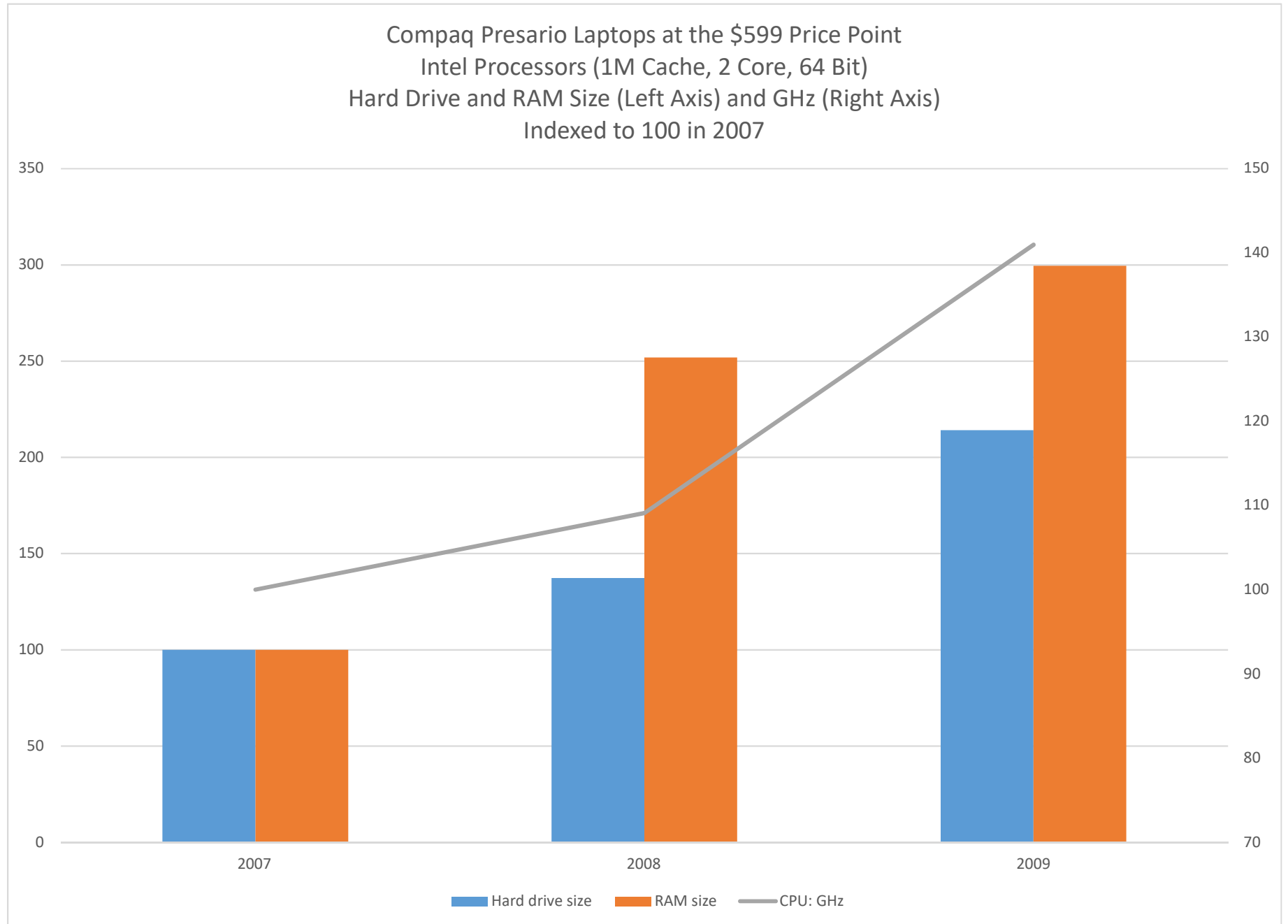


Exhibit 14
Acer Pass Through to Retailers

	Desktops				Laptops			
	Base model ²		Base model ² + GDP		Base model ²		Base model ² + GDP	
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
I. First price¹								
Passthrough	1.13	1.13	1.14	1.12	1.52	1.54	1.52	1.52
Std.err.	0.11	0.12	0.12	0.13	0.06	0.07	0.06	0.08
t-stat (=0)	10.53	9.25	9.92	8.79	24.90	21.90	24.72	20.24
P> t (=0) ⁴	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	1.24	1.03	1.25	0.93	8.57	7.69	8.40	6.96
P> t (=1) ⁴	0.22	0.31	0.21	0.36	0.00	0.00	0.00	0.00
	Base model ²		Base model ² + GDP		Base model ²		Base model ² + GDP	
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
II. Average price¹								
Passthrough	1.14	1.14	1.15	1.13	1.47	1.52	1.47	1.51
Std.err.	0.11	0.12	0.12	0.13	0.05	0.08	0.05	0.08
t-stat (=0)	10.09	9.29	9.95	8.67	27.49	20.02	27.87	18.51
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	1.26	1.15	1.33	1.02	8.78	6.88	8.91	6.25
P> t (=1)	0.21	0.25	0.19	0.31	0.00	0.00	0.00	0.00
Models	75	75	75	75	53	53	53	53
N	75	75	75	75	53	53	53	53
Revenue	1,869,386,309				5,134,319,070			
Units	4,391,824				9,981,124			

Sources: ACER-IPP-0000002 CR.xls and similarly named files numbered 222-224 and 228-229, ark.intel.com, and <http://www.cpu-world.com/>. See AGE_Descriptions.do and Acer_1.do. Data from the following third parties were used to identify product characteristics: Amazon, Best Buy, Ingram, MEI, PC Connection, and SED.

Notes

1. The "first price" variable is the price associated with the largest transaction (by units) on the first day of sales. The cost variable is the corresponding first cost. The "average price" variable is the quantity weighted average price for the month when the first sale is observed, and the cost is the corresponding average cost. See DellRetail.do.
2. The base model includes control variables for computer manufacturer (Acer, Gateway, or eMachine), CPU characteristics (manufacturer, bits, cores, threads, GHz, cache), hard drive size, RAM size, ODD type, screen size, and operating system.
3. Model specification [1] includes a single variable (in its "continuous" form) for the variables GHz, hard drive size, and screen size (laptops). All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Model specification [2] includes a set of dummy variables for the values observed in the GHz, hard drive, and screen size. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
4. The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 15
Illustration of Impact of Memory on Price

RAM Size	Desktops	Laptops
256 MB		0.0 (base)
512 MB	0.0 (base)	620.6 *
1024 MB	71.8	1033.8 **
2048 MB	44.0	1137.2 ***
3072 MB	97.3	1212.8 **
4096 MB	128.4 **	1038.5 *
6144 MB	136.4 *	
8192 MB	387.7 ***	
12288 MB	89.9	

Sources: Acer_coeffs.do.

Note: A blank cell represents a variable that was not included in the regression. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level, two-tailed.

Exhibit 17
Dell Pass Through to Retailers¹

		Desktops				Laptops				
Item Class	Brand Desc	First Price		First Cost		First Price		First Cost		
		Price	Cost	Price	Cost	Price	Cost	Price	Cost	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]		[REDACTED]				[REDACTED]				
[REDACTED]										

Notes

1. Dell models are identified using the "Item Class" and "Brand Desc" fields.
2. The "first price" variable is the price associated with the largest transaction (by units) on the first day of sales. The cost variable is the corresponding first cost. The "average price" variable is the quantity weighted average price for the month when the first sale is observed, and the cost is the corresponding average cost. See DellRetail.do.
3. The base model includes control variables for CPU characteristics (manufacturer, bits, cores, threads, GHz, cache), hard drive size, RAM size, ODD type, screen size (laptops), network card (laptops), graphics card manufacturer, battery cells (laptops), Microsoft Office, other premium software (such as Adobe), and operating system.
4. Model specification [1] includes a single variable (in its "continuous" form) for the variables GHz, hard drive size, screen size (laptops), and battery cells (laptops). All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Model specification [2] includes a set of dummy variables for the values observed in the GHz, hard drive, screen size, and battery fields. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
5. The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 19
HP Pass Through to Retailers^{1,2}

	Desktops				Laptops			
	Base model ³		Base model ³ + GDP, Vista		Base model ³		Base model ³ + GDP, Vista	
	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴
Passthrough	0.97	0.82	0.97	0.83	1.22	0.94	1.22	0.93
Std.err.	0.20	0.18	0.20	0.18	0.20	0.22	0.20	0.23
t-stat (=0)	4.89	4.47	4.95	4.48	6.17	4.24	6.07	4.08
P> t (=0) ⁵	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	-0.16	-0.98	-0.16	-0.95	1.10	-0.28	1.10	-0.29
P> t (=1) ⁵	0.87	0.33	0.87	0.35	0.27	0.78	0.27	0.77
Models	118	118	118	118	84	84	84	84
N	118	118	118	118	84	84	84	84
Revenue	\$3,982,194,704				\$2,483,561,638			
Units	5,667,380				2,866,816			

Sources: ODD-HP000013-018; ODD-HP295750-751; ODD-HP295753-754; ODD-HP295756. See Read_HP.do and HP_1.do.

Notes

1. The price variable is the model-specific quantity weighted average price during its first month of sales (date and customer information were not provided in the sales data from HP: ODD-HP000013-018). Data used in this analysis are limited to the models for which cost and model characteristics were provided by HP.
2. The cost variable is the earliest observed model-specific standard material cost from ODD-HP295753. Cost does not include overhead allocations, which were not provided for all models.
3. The base model includes control variables for computer brand, CPU characteristics (manufacturer, bits, cores, threads, GHz, cache), hard drive size, RAM size, ODD type, second ODD type (desktops), screen size (laptops), screen resolution (laptops), network card (laptops), battery wattage (laptops), and operating system. Product characteristics are from ODD-HP295750-751.
4. Model specification [1] includes a single variable (in its "continuous" form) for the variables GHz, hard drive size, and screen size (laptops). All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Model specification [2] includes a set of dummy variables for the values observed in the GHz, hard drive, and screen size fields. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
5. The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 20

HP Pass Through for Direct to Consumer Sales¹

	Desktops				Laptops			
	Base model ³		Base model ³ + GDP		Base model ³		Base model ³ + GDP	
I. First price ²	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴
Passthrough	1.58	1.54	1.55	1.54	0.70	1.04	0.65	0.90
Std.err.	0.12	0.12	0.14	0.12	0.39	0.46	0.42	0.64
t-stat (=0)	12.78	12.55	11.49	12.67	1.79	2.26	1.54	1.40
P> t (=0) ⁵	0.00	0.00	0.00	0.00	0.04	0.01	0.06	0.08
t-stat (=1)	4.69	4.42	4.07	4.45	-0.78	0.09	-0.84	-0.16
P> t (=1) ⁵	0.00	0.00	0.00	0.00	0.44	0.93	0.40	0.87
II. Average price ²	Base model ³		Base model ³ + GDP		Base model ³		Base model ³ + GDP	
	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴	[1] ⁴	[2] ⁴
Passthrough	1.55	1.52	1.52	1.52	0.73	0.82	0.67	0.65
Std.err.	0.10	0.11	0.11	0.11	0.28	0.34	0.28	0.50
t-stat (=0)	14.92	14.29	14.02	14.13	2.64	2.40	2.39	1.31
P> t (=0)	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.10
t-stat (=1)	5.29	4.92	4.77	4.81	-0.97	-0.53	-1.16	-0.69
P> t (=1)	0.00	0.00	0.00	0.00	0.34	0.60	0.25	0.49
Models	72	72	72	72	62	62	62	62
N	72	72	72	72	62	62	62	62
Revenue	37,737,547				52,276,156			
Units	50,161				59,849			

Sources: ODD-HP295737-746; ODD-HP295750-751; ODD-HP295753-754; ODD-HP295756; See Read_HP_Cost.do, Read_HP_DirectSalesModelChars.do, Read_HP_DirectSalesModelChars.do, HP_DS_1.do.

Notes

1. HP direct sales are for preconfigured models only (value "STO" in the "Source" field). HP did not provide the configurations or costs for its customer configured sales (represented by the value "CTO" in the "Source" field).
2. The "first price" variable is the price associated with the largest transaction (by units) on the first day of sales. The cost variable is the corresponding first cost. The "average price" variable is the quantity weighted average price for the month when the first sale is observed, and the cost is the corresponding average cost. See DellRetail.do.
3. The base model includes control variables for CPU characteristics (manufacturer, bits, cores, threads, GHz, cache), hard drive size, RAM size, ODD type, screen size (laptops), network card (laptops), battery cells (laptops), and operating system.
4. Model specification [1] includes a single variable (in its "continuous" form) for the variables GHz, hard drive size, screen size (laptops), and battery cells (laptops). All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Model specification [2] includes a set of dummy variables for the values observed in the GHz, hard drive, screen size, and battery fields. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
5. The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.



Exhibit 22
Best Buy Passed Through Introductory Costs, Including the Costs of Products Sold at Price Points, Desktops

I. All sales within the first 30 days of model introduction¹

All sales within the first 30 days of model introduction																		
A. Base Model: OEM, CPU characteristics, HD, RAM, ODD, time trend																		
Coef. Std.err. t-stat (=0) P> t (=0) ⁵ t-stat (=1) P> t (=1) ⁵	Transaction analysis						Weekly analysis		Monthly analysis									
	All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ⁴		Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point	
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³		
	1.06	1.06	1.06	1.03	1.14	1.12	1.07	1.03	1.07	1.07	1.07	1.07	1.17	1.18	1.08	1.08	1.14	1.13
	0.04	0.04	0.05	0.05	0.02	0.02	0.07	0.07	0.04	0.04	0.04	0.05	0.02	0.03	0.03	0.04	0.03	0.03
	28.55	25.55	21.75	20.49	57.77	49.66	16.27	15.71	27.94	24.81	26.72	23.10	48.09	45.44	36.73	29.61	39.53	33.59
B. Base model + macroeconomic controls (GDP, Vista)																		
Coef. Std.err. t-stat (=0) P> t (=0) t-stat (=1) P> t (=1)	Transaction analysis						Weekly analysis		Monthly analysis									
	All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ⁴		Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point	
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³		
	1.07	1.06	1.06	1.03	1.14	1.12	1.06	1.03	1.08	1.07	1.08	1.07	1.17	1.18	1.08	1.08	1.14	1.14
	0.04	0.04	0.05	0.05	0.02	0.02	0.07	0.07	0.04	0.04	0.04	0.05	0.03	0.03	0.03	0.04	0.03	0.03
	27.44	25.38	21.44	20.54	56.23	49.45	16.29	15.85	26.86	24.64	25.63	22.89	47.53	45.19	36.19	30.39	39.22	33.33
C. Base model + time period dummy variables																		
Coef. Std.err. t-stat (=0) P> t (=0) t-stat (=1) P> t (=1)	Transaction analysis						Weekly analysis		Monthly analysis									
	All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ⁴		Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point	
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³		
	1.10	1.09	1.08	1.07	1.14	1.10	1.06	1.04	1.10	1.10	1.11	1.10	1.19	1.20	1.14	1.14	1.12	1.12
	0.03	0.03	0.03	0.04	0.02	0.03	0.05	0.05	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.04	0.04
	39.90	38.11	31.44	29.88	53.21	44.08	22.68	21.80	38.53	36.35	34.42	31.43	47.69	47.33	34.35	33.34	30.73	30.11
N	2,747,815	2,747,815	1,723,207	1,723,207	1,025,445	1,025,445	1,338,359	1,338,359	2,103	2,103	411	411	411	411	326	326	274	274
Models	411	411	411	411	326	326	274	274	411	411	411	411	411	411	326	326	274	274

II. HP sales within the first 30 days of model introduction²

A. Base Model: CPU characteristics, HD, RAM, ODD, second ODD, OS, time trend																
Transaction analysis								Weekly analysis		Monthly analysis						
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ⁴		Average price over first 30 days ⁵		Median price over first 30 days		Introductory price point	Most common price point	
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
Coef.	1.10	1.15	1.16	1.13	1.12	1.13	1.18	1.08	1.10	1.15	1.10	1.15	1.29	1.35	1.32	1.36
Std.err.	0.06	0.06	0.06	0.06	0.05	0.04	0.06	0.07	0.06	0.06	0.07	0.08	0.07	0.08	0.11	0.17
t-stat (=0)	19.61	19.66	19.25	18.07	23.83	26.19	20.91	15.68	19.05	18.79	16.50	14.56	18.97	17.02	12.15	8.21
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	1.79	2.55	2.62	2.11	2.62	3.09	3.18	1.17	1.72	2.43	1.49	1.86	4.24	4.42	2.95	2.17
P> t (=1)	0.08	0.01	0.01	0.04	0.01	0.00	0.00	0.25	0.09	0.02	0.14	0.07	0.00	0.00	0.00	0.03
B. Base model + macroeconomic controls (GDP, Vista)																
Transaction analysis								Weekly analysis		Monthly analysis						
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ⁴		Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point	Most common price point	
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
Coef.	1.10	1.15	1.15	1.13	1.13	1.13	1.17	1.03	1.10	1.15	1.10	1.15	1.30	1.35	1.34	1.37
Std.err.	0.06	0.06	0.07	0.06	0.05	0.04	0.07	0.07	0.06	0.07	0.07	0.09	0.07	0.08	0.09	0.12
t-stat (=0)	18.47	18.17	16.91	17.79	23.33	27.11	16.65	13.93	17.90	17.32	15.31	13.20	19.81	17.48	14.65	11.47
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	1.66	2.37	2.21	2.05	2.65	3.12	2.46	0.41	1.61	2.26	1.35	1.70	4.57	4.58	3.74	3.09
P> t (=1)	0.10	0.02	0.03	0.04	0.01	0.00	0.02	0.69	0.11	0.03	0.18	0.09	0.00	0.00	0.00	0.04
N	772,422	772,422	392,754	392,754	261,703	261,703	301,213	301,213	515	515	101	101	101	101	64	64
Models	101	101	101	101	64	64	55	55	101	101	101	101	101	101	64	64

Sources: BBODD0000002 - 11; ODD-HP295750-752; <http://ark.intel.com/>; <http://www.cpu-world.com/index.html>.

Notes

- "All sales" refers to all models sold by Best Buy. Model characteristics are identified using the Description field provided by Best Buy. CPU characteristics were identified using the CPU model number and information provided at <http://ark.intel.com/> (for Intel processors) and <http://www.cpu-world.com/index.html> (for AMD processors).
- "HP sales" restricts regressions to HP models only. Model characteristics are supplemented using detailed bill of material reports provided by HP. Because the number of models is small, the model including time period dummy variables (presented as C in section I) cannot be estimated.
- Model specification [1] include a single variable (in its "continuous" form) for each of the variables GHz and hard drive size. All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Results for model specification [2] includes a set of dummy variables for the values observed in the GHz and hard drive fields. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
- Regressions using average (arithmetic mean) prices are quantity weighted.
- The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 23

Best Buy Passed Through Introductory Costs, Including the Costs of Products Sold at Price Points, Laptops

I. All sales within the first 30 days of model introduction¹

A. Base Model: OEM, CPU characteristics, HD, RAM, screen size, time trend																		
Transaction analysis								Weekly analysis		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ^a		Average price over first 30 days ^a		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
Coef.	1.15	1.08	1.15	1.08	1.09	1.10	1.15	1.06	1.15	1.08	1.15	1.09	1.20	1.17	1.11	1.14	1.20	1.17
Std.err.	0.03	0.04	0.03	0.04	0.03	0.04	0.04	0.05	0.03	0.04	0.03	0.04	0.02	0.03	0.04	0.04	0.02	0.03
t-stat (=0)	39.17	29.43	39.37	29.62	42.40	30.97	31.47	23.79	39.03	29.11	38.23	27.84	54.97	36.12	31.95	31.69	54.70	35.85
P> t (=0) ⁵	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	5.07	2.19	5.03	2.14	3.46	2.77	4.11	1.40	5.14	2.27	5.00	2.18	8.91	5.16	3.11	3.75	9.09	5.03
P> t (=1) ⁵	0.00	0.03	0.00	0.03	0.00	0.01	0.00	0.16	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
B. Base model + macroeconomic controls (GDP, Vista)																		
Transaction analysis								Weekly analysis		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ^a		Average price over first 30 days ^a		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
Coef.	1.14	1.08	1.14	1.08	1.09	1.10	1.14	1.06	1.14	1.08	1.14	1.08	1.20	1.17	1.11	1.13	1.20	1.17
Std.err.	0.03	0.04	0.03	0.04	0.03	0.04	0.04	0.04	0.03	0.04	0.03	0.04	0.02	0.03	0.04	0.04	0.02	0.03
t-stat (=0)	40.90	30.72	40.76	30.87	39.75	29.97	33.00	24.99	40.76	30.38	39.86	29.00	54.84	36.26	32.16	31.61	54.53	35.94
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	5.00	2.29	4.89	2.14	3.41	2.76	3.97	1.43	5.07	2.33	4.93	2.27	9.09	5.38	3.23	3.72	9.27	5.21
P> t (=1)	0.00	0.02	0.00	0.03	0.00	0.01	0.00	0.15	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
C. Base model + time period dummy variables																		
Transaction analysis								Weekly analysis		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ^a		Average price over first 30 days ^a		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
Coef.	1.17	1.11	1.18	1.11	1.10	1.08	1.18	1.12	1.17	1.11	1.17	1.11	1.20	1.19	1.07	1.07	1.21	1.20
Std.err.	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.04	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.04
t-stat (=0)	48.01	36.14	48.75	37.05	44.12	35.80	41.63	31.14	47.93	35.64	45.61	33.02	46.03	32.72	24.15	26.47	46.26	32.73
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	7.04	3.42	7.29	3.77	3.84	2.60	6.54	3.28	7.21	3.58	6.69	3.32	7.69	5.28	1.55	1.63	7.92	5.32
P> t (=1)	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.10	0.00	0.00
N	5,978,055	5,978,055	5,763,624	5,763,624	1,791,654	1,791,654	4,505,402	4,505,402	2,932	2,932	578	578	578	578	564	564	568	568
Models	578	578	578	578	578	564	568	568	578	578	578	578	578	578	564	564	568	568

II. HP/Toshiba sales within the first 30 days of model introduction²

A. Base Model: CPU characteristics, HD, RAM, ODD, screen size, OS, time trend																		
Transaction analysis								Weekly analysis		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ⁴		Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
Coef.	0.82	0.67	0.79	0.65	1.04	1.02	0.90	0.74	0.82	0.67	0.82	0.67	1.04	0.74	0.91	0.84	1.06	0.75
Std.err.	0.10	0.08	0.09	0.07	0.12	0.16	0.15	0.13	0.11	0.08	0.13	0.12	0.23	0.27	0.19	0.34	0.24	0.28
t-stat (=0)	8.13	8.83	8.46	9.10	8.81	6.39	5.84	5.63	7.79	8.30	6.13	5.59	4.52	2.70	4.80	2.46	4.48	2.66
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
t-stat (=1)	-1.75	-4.45	-2.25	-4.93	0.37	0.11	-0.65	-2.01	-1.66	-4.16	-1.31	-2.80	0.16	-0.97	-0.45	-0.48	0.23	-0.87
P> t (=1)	0.08	0.00	0.03	0.00	0.71	0.92	0.52	0.05	0.10	0.00	0.19	0.01	0.87	0.33	0.65	0.64	0.82	0.39
B. Base model + macroeconomic controls (GDP, Vista)																		
Transaction analysis								Weekly analysis		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point		Weekly average price ⁴		Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³	[1] ³	[2] ³
Coef.	0.75	0.63	0.73	0.63	1.14	1.08	0.86	0.71	0.75	0.63	0.75	0.63	1.03	0.71	0.91	0.87	1.02	0.73
Std.err.	0.10	0.07	0.09	0.07	0.07	0.10	0.16	0.13	0.10	0.07	0.13	0.11	0.26	0.28	0.23	0.35	0.26	0.29
t-stat (=0)	7.73	9.24	8.28	9.34	16.66	10.78	5.41	5.55	7.37	8.65	5.65	5.60	3.96	2.54	3.90	2.54	4.01	2.52
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01
t-stat (=1)	-2.61	-5.41	-3.13	-5.58	2.04	0.82	-0.86	-2.27	-2.50	-5.03	-1.92	-3.25	0.10	-1.04	-0.38	-0.37	0.09	-0.92
P> t (=1)	0.01	0.00	0.00	0.00	0.05	0.42	0.40	0.03	0.01	0.00	0.06	0.00	0.92	0.30	0.71	0.72	0.93	0.36
N	770,033	770,033	729,494	729,494	173,901	173,901	503,145	503,145	309	309	61	61	61	61	61	61	60	60
Models	61	61	61	61	61	61	60	60	61	61	61	61	61	61	61	61	60	60

Sources: BBDD00000002 - 11; ODD-HP295750-752; http://ark.intel.com/; http://www.cpu-world.com/index.html. See BestBuy30_Analysis.do, BestBuy30_Analysis2.do, BestBuy30_Analysis3.do.

Notes

- "All sales" refers to all models sold by Best Buy. Model characteristics are identified using the Description field provided by Best Buy. CPU characteristics were identified using the CPU model number and information provided at <http://ark.intel.com/> (for Intel processors) and <http://www.cpu-world.com/index.html> (for AMD processors).
- "HP/Toshiba sales" restricts regressions to HP and Toshiba models only. Model characteristics are supplemented using detailed bill of material reports provided by HP and Toshiba. Because the number of models is small, the model including time period dummy variables (presented as C in section I) cannot be estimated.
- Model specification [1] include a single variable (in its "continuous" form) for each of the variables GHz, LCD screen size, and hard drive size. All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Results for model specification [2] includes a set of dummy variables for the values observed in the GHz, screen size, and hard drive fields. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
- Regressions using average (arithmetic mean) prices are quantity weighted.
- The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 24

Costco Passed Through Introductory Costs, Including the Costs of Products Sold at Price Points, Desktops¹

A. Base Model: OEM, CPU characteristics, screen size, HD, RAM, ODD, time trend ¹													
Transaction analysis				Weekly analysis		Monthly analysis							
All transactions	All transactions w/prices ending in "9"	All transactions at introductory price point	All transactions at most common price point	Weekly average price ^a		Average price over first 30 days ^a	Median price over first 30 days	Introductory price point	Most common price point				
B. Base model + macroeconomic controls (GDP, Vista)													
Transaction analysis				Weekly analysis		Monthly analysis							
All transactions	All transactions w/prices ending in "9"	All transactions at introductory price point	All transactions at most common price point	Weekly average price ^a		Average price over first 30 days ^a	Median price over first 30 days	Introductory price point	Most common price point				

Notes

Notes

Exhibit 28

PC Connection Passed Through Introductory Costs, Including the Costs of Products Sold at Price Points, Desktops¹

A. Base Model: OEM, CPU characteristics, HD, RAM, ODD, time trend ¹																		
Transaction analysis								Weekly analysis Weekly average price ⁴		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point				Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²			[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²
Coef.	1.05	1.03	1.04	1.02	1.03	0.99	1.03	1.01			0.93	0.91	0.93	0.91	1.06	1.06	1.03	1.02
Std.err.	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.03			0.03	0.03	0.03	0.03	0.04	0.04	0.01	0.02
t-stat (=0)	54.31	46.39	60.81	48.71	52.50	33.31	50.26	38.95			30.35	29.00	32.10	31.08	30.20	28.92	74.70	61.01
P> t (=0) ⁶	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	2.37	1.50	2.12	1.10	1.30	-0.23	1.25	0.42			-2.32	-2.87	-2.48	-3.07	1.74	1.68	2.29	1.06
P> t (=1) ⁴	0.02	0.13	0.03	0.27	0.19	0.82	0.21	0.67			0.02	0.00	0.01	0.00	0.08	0.09	0.02	0.29
B. Base model + macroeconomic controls (GDP, Vista)																		
Transaction analysis								Weekly analysis Weekly average price ⁴		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point				Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²			[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²
Coef.	1.04	1.03	1.04	1.02	1.02	0.99	1.03	1.01			0.93	0.91	0.93	0.91	1.06	1.06	1.03	1.01
Std.err.	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.03			0.03	0.03	0.03	0.03	0.04	0.04	0.01	0.02
t-stat (=0)	52.83	45.86	60.69	49.15	53.19	31.43	50.10	38.95			30.39	29.08	32.23	31.19	30.08	28.84	72.88	58.77
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	2.10	1.39	2.06	1.05	1.26	-0.32	1.25	0.42			-2.50	-2.90	-2.59	-3.14	1.71	1.68	2.00	0.82
P> t (=1)	0.04	0.16	0.04	0.29	0.21	0.75	0.21	0.67			0.01	0.00	0.01	0.00	0.09	0.09	0.05	0.41
C. Base model + time period dummy variables																		
Transaction analysis								Weekly analysis Weekly average price ⁴		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point				Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²			[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²
Coef.	1.04	1.03	1.04	1.02	1.03	0.99	1.03	1.01			0.92	0.91	0.92	0.91	1.06	1.07	1.03	1.02
Std.err.	0.02	0.03	0.01	0.02	0.02	0.03	0.02	0.02			0.03	0.03	0.03	0.03	0.04	0.04	0.02	0.02
t-stat (=0)	48.21	41.22	79.41	61.48	49.85	33.17	69.74	52.23			30.37	28.27	32.82	30.84	29.00	27.89	66.13	54.56
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	1.73	1.16	2.69	1.18	1.19	-0.43	1.87	0.63			-2.57	-2.84	-2.79	-3.17	1.73	1.74	2.00	0.84
P> t (=1)	0.08	0.25	0.01	0.24	0.23	0.66	0.06	0.53			0.01	0.00	0.01	0.00	0.08	0.08	0.05	0.40
N	19,788	19,788	8,634	8,634	4,512	4,512	6,993	6,993			6,584	6,584	2,755	2,755	2,755	2,755	741	741
Models	2,755	2,755	2,755	2,755	741	741	886	886			2,755	2,755	2,755	2,755	2,755	2,755	741	741
																	886	886

Sources: MD ODD 2004.xlsx-MD ODD 2009.xlsx; ODD Sales Out 1 2004-2009.xlsx, ODD Sales Out 2 2004.xlsx-ODD Sales Out 2 2009.xlsx; <http://ark.intel.com/>; <http://www.cpu-world.com/index.html>. See ReadPCConnection.do, PCConnection_Chars.do, PCConnection30_Analysis1-3.do

Notes

1. Model characteristics are identified using the Description field provided by PC Connection. CPU characteristics were identified using the CPU model number and information provided at <http://ark.intel.com/> (for Intel processors) and <http://www.cpu-world.com/index.html> (for AMD processors).
2. Model specification [1] includes a single variable (in its "continuous" form) for each of the variables GHz and hard drive size. All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Results for model specification [2] includes a set of dummy variables for the values observed in the GHz and hard drive fields. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
3. Regressions using average (arithmetic mean) prices are quantity weighted.
4. The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 29

PC Connection Passed Through Introductory Costs, Including the Costs of Products Sold at Price Points, Laptops¹

A. Base Model: OEM, CPU characteristics, HD, RAM, ODD, time trend ¹																		
Transaction analysis								Weekly analysis Weekly average price ⁴		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point				Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²			[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²
Coef.	0.97	0.95	1.05	1.03	1.05	1.04	1.04	1.02	0.96	0.91	0.96	0.92	1.00	0.97	1.05	1.03	1.01	0.99
Std.err.	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02
t-stat (=0)	69.70	57.45	107.99	85.48	62.75	51.64	74.32	57.52	48.90	47.17	48.55	46.59	99.94	82.68	69.09	52.93	58.93	46.15
P> t (=0) ⁴	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	-1.86	-3.31	4.90	2.75	2.88	1.75	2.93	1.17	-2.15	-4.58	-2.05	-4.25	-0.50	-2.33	3.07	1.42	0.71	-0.67
P> t (=1) ⁴	0.06	0.00	0.00	0.01	0.00	0.08	0.00	0.24	0.03	0.00	0.04	0.00	0.62	0.02	0.00	0.16	0.48	0.51
B. Base model + macroeconomic controls (GDP, Vista)																		
Transaction analysis								Weekly analysis Weekly average price ⁴		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point				Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²			[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²
Coef.	0.97	0.95	1.05	1.03	1.05	1.04	1.04	1.02	0.96	0.92	0.96	0.92	1.00	0.97	1.05	1.03	1.01	0.99
Std.err.	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02
t-stat (=0)	69.40	57.92	108.00	85.53	63.60	52.68	74.58	57.84	49.73	47.83	49.36	47.22	100.26	83.38	68.75	52.95	59.03	46.35
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	-1.86	-3.25	4.90	2.75	2.94	1.80	2.86	1.11	-2.26	-4.47	-2.16	-4.32	-0.50	-2.17	3.07	1.42	0.71	-0.62
P> t (=1)	0.06	0.00	0.00	0.01	0.00	0.07	0.00	0.27	0.02	0.00	0.03	0.00	0.62	0.03	0.00	0.16	0.48	0.54
C. Base model + time period dummy variables																		
Transaction analysis								Weekly analysis Weekly average price ⁴		Monthly analysis								
All transactions		All transactions w/prices ending in "9"		All transactions at introductory price point		All transactions at most common price point				Average price over first 30 days ⁴		Median price over first 30 days		Introductory price point		Most common price point		
	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²			[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²	[1] ²	[2] ²
Coef.	0.98	0.95	1.05	1.02	1.04	1.02	1.04	1.01	0.96	0.92	0.96	0.92	1.00	0.97	1.04	1.02	1.01	0.98
Std.err.	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02
t-stat (=0)	78.04	64.58	102.70	79.16	57.15	46.95	69.44	53.76	52.96	49.00	52.24	48.08	100.52	82.39	68.05	52.18	58.27	45.52
P> t (=0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t-stat (=1)	-1.69	-3.20	4.50	1.85	2.39	0.86	2.33	0.42	-2.39	-4.26	-2.28	-4.11	-0.40	-2.25	2.60	0.84	0.59	-0.82
P> t (=1)	0.09	0.00	0.00	0.06	0.02	0.39	0.02	0.67	0.02	0.00	0.02	0.00	0.69	0.02	0.01	0.40	0.56	0.41
N	36,412	36,412	14,675	14,675	6,852	6,852	11,320	11,320	11,764	11,764	4,764	4,764	4,764	4,764	1,362	1,362	1,659	1,659
Models	4,764	4,764	4,764	4,764	1,362	1,362	1,659	1,659	4,764	4,764	4,764	4,764	4,764	4,764	1,362	1,362	1,659	1,659

Sources: MD ODD 2004.xlsx-MD ODD 2009.xlsx; ODD Sales Out 1 2004-2009.xlsx, ODD Sales Out 2 2004.xlsx-ODD Sales Out 2 2009.xlsx; <http://ark.intel.com/>; <http://www.cpu-world.com/index.html>. See ReadPCConnection.do, PCConnection_Chars.do, PCConnection30_Analysis1-3.do

Notes

- Model characteristics are identified using the Description field provided by PC Connection. CPU characteristics were identified using the CPU model number and information provided at <http://ark.intel.com/> (for Intel processors) and <http://www.cpu-world.com/index.html> (for AMD processors).
- Model specification [1] includes a single variable (in its "continuous" form) for each of the variables GHz and hard drive size. All other model characteristics are represented as categorical variables with a dummy variable included in the model for each category. Results for model specification [2] includes a set of dummy variables for the values observed in the GHz and hard drive fields. The GHz dummy variables represent the following intervals: <1.8, 1.8-2.0, 2.0-2.2, 2.2-2.4, 2.4-2.6, 2.6-2.8, 2.8-3.0, 3.0-3.2, >3.2.
- Regressions using average (arithmetic mean) prices are quantity weighted.
- The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 30**OEM Input Costs Are Passed Through to Initial Retail Prices:****The Effect of HP's Standard Input Costs on the Prices of HP Products Sold at Best Buy¹
(End to End Pass Through Rates)**

	<u>Desktops</u>²	<u>Laptops</u>³
Pass through rate	1.11	1.53
Std.err.	0.39	0.43
t-stat (=0)	2.81	3.59
P> t (=0) ⁴	0.00	0.00
t-stat (=1)	0.27	1.24
P> t (=1) ⁴	0.79	0.22
# of Models	101	58

Sources: BBODD0000002-11, ODD-HP295750-751, and ODD-HP295753. See BestBuy30_Inputs.do.

Notes

1. The dependent variable is the model-specific mode price for first day sales at Best Buy. Cost is the earliest observed, model-specific standard cost provided by HP.
2. The model includes variables for CPU characteristics, HD, RAM, ODD, second ODD, operating system, GDP, and a time trend.
3. The model includes variables for computer brand, CPU characteristics, HD, RAM, ODD, screen size, network card, operating system, GDP, and a time trend.
4. The p-values are from one-sided significance tests for the null hypothesis that the pass-through rate equals zero and from two-sided significance tests for the null hypothesis that the pass-through rate equals one.

Exhibit 31
Summary Statistics from Fixed Effects Regression Datasets

OEMs		Obs	Models				Prices					Costs					Total Revenue	Total Units
			Total	w/Obs>1	w/Price Variation	w/Cost Variation	Mean	StdDev	Min	Median	Max	Mean	StdDev	Min	Median	Max		
Acer	Desktops	13,418	3,698	2,005	1,521	1,706	\$547	308	49	501	4,744	\$489	224	0.1	449	3,012	\$7,533,384,927	14,693,845
	Laptops	15,228	2,438	2,025	1,743	1,610	\$684	486	100	486	4,459	\$744	357	243	605	2,919	\$4,316,009,817	5,810,286
NEC, data set 1	Drives, data set 1	1,599	183	164	148	127	\$54	33	1	51	165	\$62	30	9	53	193	\$819,174,875	13,059,090
	Drives, data set 2	2,998	376	314	309	305	\$53	37	6	43	277	\$51	34	11	41	263	\$2,835,182,674	63,778,725
Panasonic	Drives, data set 1	694	72	63	55	63	\$193	144	20	165	500	\$182	136	19	160	475	\$158,268,276	3,226,969
	Drives, data set 2	1,413	165	150	125	146	\$56	42	22	42	259	\$53	39	20	39	244	\$102,670,674	2,522,327
	Drives, data set 3	2,289	358	283	274	274	\$77	79	15	52	1,082	\$71	69	5	47	757	\$181,232,139	3,211,926
Distributors																		
ASI	Drives	20,261	2,112	1,864	1,829	1,732	\$47	47	3	32	950	\$45	44	5	31	852	\$616,823,996	18,701,191
Ingram	Desktops	40,153	7,116	5,524	4,919	4,093	\$751	377	1	691	4,697	\$742	369	1	687	4,892	\$3,378,063,900	4,678,175
	Laptops	69,541	12,752	10,356	9,676	8,358	\$1,412	782	1	1,291	5,401	\$1,388	766	1	1,273	5,361	\$6,878,973,245	6,431,565
	Drives	19,798	1,671	1,486	1,463	1,191	\$130	114	1	100	1,033	\$124	109	1	96	948	\$265,588,765	4,636,236
Synnex	Desktops	51,944	13,118	7,786	6,862	3,280	\$793	339	72	763	6,667	\$776	341	80	746	7,884	\$4,207,353,688	5,679,899
	Laptops	78,510	19,749	12,666	11,276	5,326	\$1,270	626	107	1,205	5,991	\$1,243	620	94	1,182	5,253	\$7,447,970,117	9,115,832
	Drives	11,540	1,421	1,093	1,041	905	\$84	98	9	51	1,115	\$81	95	9	48	1,115	\$122,671,130	2,977,642
Retailers																		
Best Buy	Desktops	13,606	1,362	1,221	1,191	385	\$672	475	14	540	4,000	\$772	437	49	644	3,567	\$8,822,794,532	14,563,476
	Laptops	10,940	1,237	1,145	1,101	379	\$742	483	20	634	3,456	\$855	452	25	765	3,062	\$15,202,486,782	22,625,167
	Drives	4,739	371	338	328	251	\$131	139	10	92	1,347	\$119	118	23	84	1,105	\$537,847,042	5,435,255
Fry's	Desktops	6,268	705	598	595	231	\$638	376	50	540	3,699	\$660	360	56	564	3,255	\$436,813,963	790,023
	Laptops	17,120	1,713	1,574	1,566	926	\$959	598	79	778	4,200	\$1,053	576	79	919	3,825	\$1,613,794,122	1,934,750
	Drives, data set 1	2,819	191	186	184	117	\$162	164	8	100	1,000	\$146	155	6	102	1,760	\$124,851,695	1,183,314
	Drives, data set 2	12,776	876	865	863	571	\$125	110	8	86	998	\$116	99	6	83	866	\$456,632,367	5,063,178
Office Depot	Desktops, MD data	7,382	2,174	1,077	891	894	\$1,041	717	93	785	6,596	\$967	666	80	735	5,581	\$151,962,995	200,088
	Laptops, MD data	11,467	3,383	1,739	1,490	1,502	\$1,597	559	163	1,528	4,682	\$1,488	524	159	1,433	4,384	\$267,406,281	190,612
	Drives, MD data	6,703	1,412	846	793	732	\$121	94	11	101	990	\$112	87	6	93	951	\$7,330,318	64,818
OfficeMax	Desktops, SO data	21,800	4,642	3,286	3,105	2,559	\$891	597	58	751	7,198	\$863	564	41	745	5,579	\$520,588,225	699,609
	Laptops, SO data	37,826	8,351	5,908	5,595	4,735	\$1,591	655	26	1,520	5,499	\$1,520	625	25	1,456	5,088	\$1,056,823,773	822,924
	Drives, SO data	16,245	2,161	1,724	1,696	1,391	\$126	123	7	95	1,831	\$112	109	7	85	1,654	\$27,195,907	305,155

Sources: See PT_Analysis_OEMDISTRIBUTOR.do, PT_Analysis_RETAIL.do, and PT_Analysis_OTHERRETAIL.do. See the text for third party data sources.

Exhibit 32
Fixed Effects Pass-Through for OEMs and Distributors¹

I. DESKTOPS

OEMs		Current Cost					Lag Cost					Selected Rate ⁶	z: Cost = 1	p-val ⁷
		Pass-Through	Std.Err.	z: Cost = 0	p-val ⁴	IPCC ⁵	Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC			
Acer	Model 1 ²	1.12	0.10	11.5	0.00	Exc. Unl.	1.01	0.11	9.0	0.00	Exc. Unl.	1.01	0.11	0.91
	Model 2 ³	0.64	0.11	5.8	0.00	Exc. Unl.	0.85	0.16	5.2	0.00	Exc. Unl.	0.85	-0.94	0.35
Distributors														
Ingram	Model 1	1.02	0.00	222.4	0.00	Exc. Unl.	1.02	0.01	144.8	0.00	Exc. Unl.	1.02	4.10	0.00
	Model 2	1.02	0.00	215.0	0.00	Exc. Unl.	1.02	0.01	132.0	0.00	Exc. Unl.	1.02	3.55	0.00
Synnex	Model 1	0.99	0.00	289.0	0.00	Exc. Unl.	1.00	0.01	134.8	0.00	Exc. Unl.	1.00	0.06	0.95
	Model 2	0.99	0.00	280.1	0.00	Exc. Unl.	1.01	0.01	121.1	0.00	Exc. Unl.	1.01	0.72	0.47

II. LAPTOPS

OEMs		Current Cost					Lag Cost					Selected Rate	z: Cost = 1	p-val
		Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC	Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC			
Acer	Model 1	1.88	0.09	20.3	0.00	Exc. Unl.	2.21	0.15	14.89	0.00	Exc. Unl.	2.21	8.14	0.00
	Model 2	1.17	0.11	11.0	0.00	Exc. Unl.	1.11	0.18	6.19	0.00	Exc. Unl.	1.11	0.62	0.53
Distributors														
Ingram	Model 1	1.01	0.00	288.8	0.00	Exc. Unl.	1.01	0.01	193.66	0.00	Exc. Unl.	1.01	3.86	0.00
	Model 2	1.01	0.00	272.7	0.00	Exc. Unl.	1.01	0.01	181.01	0.00	Exc. Unl.	1.01	3.16	0.00
Synnex	Model 1	1.01	0.00	283.4	0.00	Exc. Unl.	1.01	0.00	261.55	0.00	Exc. Unl.	1.01	3.15	0.00
	Model 2	1.01	0.00	254.0	0.00	Exc. Unl.	1.02	0.00	213.43	0.00	Exc. Unl.	1.02	5.09	0.00

III. DRIVES

OEMs		Current Cost					Lag Cost					Selected Rate	z: Cost = 1	p-val
		Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC	Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC			
NEC, data set 1	Model 1	0.26	0.14	1.8	0.03	Ext. Unl.	0.22	0.16	1.38	0.08	Very Unl.	0.22	-4.83	0.00
	Model 2	0.28	0.15	1.9	0.03	Ext. Unl.	0.17	0.16	1.07	0.14	Unlikely	0.17	-5.36	0.00
NEC, data set 2	Model 1	0.84	0.11	7.8	0.00	Exc. Unl.	0.85	0.12	7.12	0.00	Exc. Unl.	0.85	-1.26	0.21
	Model 2	0.80	0.11	7.3	0.00	Exc. Unl.	0.83	0.12	7.13	0.00	Exc. Unl.	0.83	-1.42	0.16
Panasonic, data set 1	Model 1	0.84	0.10	8.4	0.00	Exc. Unl.	0.92	0.07	13.41	0.00	Exc. Unl.	0.92	-1.18	0.24
	Model 2	0.79	0.15	5.1	0.00	Exc. Unl.	0.99	0.06	17.93	0.00	Exc. Unl.	0.99	-0.20	0.84
Panasonic, data set 2	Model 1	0.92	0.05	17.2	0.00	Exc. Unl.	0.77	0.13	5.83	0.00	Exc. Unl.	0.92	-1.42	0.16
	Model 2	0.85	0.08	10.3	0.00	Exc. Unl.	0.71	0.17	4.20	0.00	Exc. Unl.	0.85	-1.87	0.06
Panasonic, data set 3	Model 1	1.04	0.07	14.0	0.00	Exc. Unl.	1.01	0.11	9.31	0.00	Exc. Unl.	1.01	0.08	0.94
	Model 2	1.05	0.07	14.5	0.00	Exc. Unl.	1.04	0.10	9.98	0.00	Exc. Unl.	1.04	0.35	0.72
Distributors														
ASI	Model 1	0.96	0.04	24.9	0.00	Exc. Unl.	1.01	0.02	48.39	0.00	Exc. Unl.	1.01	0.45	0.65
	Model 2	0.95	0.04	22.5	0.00	Exc. Unl.	1.01	0.02	45.47	0.00	Exc. Unl.	1.01	0.33	0.74
Ingram	Model 1	1.04	0.01	162.1	0.00	Exc. Unl.	1.04	0.01	148.45	0.00	Exc. Unl.	1.04	5.39	0.00
	Model 2	1.04	0.01	154.0	0.00	Exc. Unl.	1.04	0.01	140.79	0.00	Exc. Unl.	1.04	5.11	0.00
Synnex	Model 1	1.04	0.02	59.9	0.00	Exc. Unl.	1.03	0.01	109.06	0.00	Exc. Unl.	1.03	3.13	0.00
	Model 2	1.04	0.02	62.3	0.00	Exc. Unl.	1.03	0.01	107.68	0.00	Exc. Unl.	1.03	3.41	0.00

Sources: See PT_Analysis_OEMDISTRIBUTOR.do and PT_Analysis_RETAIL.do. GDP is from <http://www.bea.gov/national/index.htm#gdp>, viewed 1/31/2014. See the text for third party data sources.

Notes:

1. Regressions for OEMs and distributors are not quantity weighted, except for Dell.
2. Model 1: $P = f(C, \text{Product Effects, GDP, Vista})$
3. Model 2: $P = f(C, \text{Product Effects, Time Effects})$
4. "Current Cost" and "Lag Cost" p-values for the null hypothesis that the pass-through rate equals zero ($z: \text{Cost} = 0$) are from one-sided significance tests.
5. IPCC's likelihood characterization of probability of observing data if no impact assumed, according to the following mapping:

0-1% probability - Exceptionally Unlikely (Exc. Unl.)	Exc. Unl.
0-5% probability - Extremely Unlikely (Ext. Unl.)	Ext. Unl.
0-10% probability - Very Unlikely (Very Unl.)	Very Unl.
0-33% probability - Unlikely	Unlikely
0-50% probability - More Unlikely Than Likely (M.U.T.L.)	M.U.T.L.
50-100% probability - More Likely Than Unlikely (M.L.T.U.)	M.L.T.U.
66-100% probability - Likely	Likely
90-100% probability - Very Likely (Very Lik.)	Very Lik.
6. "Selected Rate" equals the "Lag Cost" rate unless the coefficients on Cost_{t-1} and Cost_{t-2} are jointly insignificant (using 10% significance level).
7. "Selected Rate" p-values for the null hypothesis that the pass-through rate equals one ($z: \text{Cost} = 1$) are from two-sided significance tests.

Exhibit 33
Fixed Effects Pass-Through for Retailers: Desktops¹

		Current Cost					Lag Cost							
		Pass-Through	Std.Err.	z: Cost = 0	p-val ⁴	IPCC ⁵	Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC	Selected Rate ⁶	z: Cost = 1	p-val ⁷
OEMs	Model 1 ²	1.56	0.08	19.4	0.00	Exc. Unl.	2.05	0.16	13.10	0.00	Exc. Unl.	2.05	6.72	0.00
	Model 2 ³	1.18	0.08	14.1	0.00	Exc. Unl.	1.34	0.12	10.92	0.00	Exc. Unl.	1.34	2.78	0.01
Best Buy (w/store)	Model 1	1.28	0.02	67.6	0.00	Exc. Unl.	1.73	0.13	13.69	0.00	Exc. Unl.	1.73	5.76	0.00
	Model 2	0.99	0.02	63.4	0.00	Exc. Unl.	1.24	0.08	15.10	0.00	Exc. Unl.	0.99	-0.64	0.52
Fry's	Model 1	0.83	0.06	14.7	0.00	Exc. Unl.	1.03	0.09	11.89	0.00	Exc. Unl.	1.03	0.38	0.70
	Model 2	0.64	0.05	12.5	0.00	Exc. Unl.	0.77	0.11	6.81	0.00	Exc. Unl.	0.77	-2.05	0.04
PC Connection MD	Model 1	1.00	0.04	27.0	0.00	Exc. Unl.	0.99	0.08	12.10	0.00	Exc. Unl.	1.00	-0.03	0.98
	Model 2	1.01	0.03	31.6	0.00	Exc. Unl.	0.99	0.05	19.39	0.00	Exc. Unl.	1.01	0.34	0.74
PC Connection SO	Model 1	0.93	0.03	33.7	0.00	Exc. Unl.	1.00	0.03	35.00	0.00	Exc. Unl.	1.00	-0.08	0.94
	Model 2	0.92	0.03	34.3	0.00	Exc. Unl.	0.98	0.03	30.43	0.00	Exc. Unl.	0.92	-3.00	0.00

		Current Cost					Lag Cost							
		Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC	Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC	Selected PT Rate	z: Cost = 1	p-val
Best Buy	Model 1	1.61	0.13	12.2	0.00	Exc. Unl.	2.18	0.20	11.07	0.00	Exc. Unl.	2.18	5.98	0.00
	Model 2	1.14	0.12	9.3	0.00	Exc. Unl.	1.41	0.16	8.53	0.00	Exc. Unl.	1.41	2.47	0.01
Best Buy (w/store)	Model 1	1.48	0.01	143.9	0.00	Exc. Unl.	1.91	0.04	54.02	0.00	Exc. Unl.	1.91	25.71	0.00
	Model 2	1.06	0.01	113.9	0.00	Exc. Unl.	1.14	0.03	37.55	0.00	Exc. Unl.	1.14	4.48	0.00
Fry's	Model 1	1.36	0.04	37.1	0.00	Exc. Unl.	1.83	0.09	20.40	0.00	Exc. Unl.	1.83	9.23	0.00
	Model 2	0.90	0.06	15.7	0.00	Exc. Unl.	1.16	0.11	10.67	0.00	Exc. Unl.	1.16	1.47	0.14
PC Connection MD	Model 1	0.64	0.25	2.6	0.00	Exc. Unl.	0.76	0.13	5.82	0.00	Exc. Unl.	0.76	-1.80	0.07
	Model 2	0.63	0.22	2.9	0.00	Exc. Unl.	0.72	0.15	4.88	0.00	Exc. Unl.	0.72	-1.92	0.06
PC Connection SO	Model 1	0.93	0.02	42.7	0.00	Exc. Unl.	0.98	0.02	42.55	0.00	Exc. Unl.	0.98	-0.88	0.38
	Model 2	0.91	0.03	36.2	0.00	Exc. Unl.	0.97	0.03	35.92	0.00	Exc. Unl.	0.97	-1.21	0.23

		Current Cost					Lag Cost							
		Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC	Pass-Through	Std.Err.	z: Cost = 0	p-val	IPCC	Selected PT Rate	z: Cost = 1	p-val
Best Buy	Model 1	1.18	0.06	18.2	0.00	Exc. Unl.	1.19	0.08	14.19	0.00	Exc. Unl.	1.19	2.27	0.02
	Model 2	1.13	0.08	14.4	0.00	Exc. Unl.	1.13	0.10	10.90	0.00	Exc. Unl.	1.13	1.23	0.22
Best Buy (w/store)	Model 1	1.12	0.01	159.9	0.00	Exc. Unl.	1.10	0.01	90.86	0.00	Exc. Unl.	1.10	8.22	0.00
	Model 2	1.06	0.01	109.8	0.00	Exc. Unl.	1.04	0.02	53.92	0.00	Exc. Unl.	1.04	1.84	0.07
Fry's	Model 1	1.32	0.04	31.6	0.00	Exc. Unl.	1.40	0.03	42.49	0.00	Exc. Unl.	1.40	12.16	0.00
	Model 2	1.33	0.04	37.0	0.00	Exc. Unl.	1.40	0.05	30.40	0.00	Exc. Unl.	1.40	8.64	0.00
Fry's, data set 2	Model 1	1.21	0.02	59.6	0.00	Exc. Unl.	1.22	0.03	44.64	0.00	Exc. Unl.	1.22	8.05	0.00
	Model 2	1.12	0.03	41.6	0.00	Exc. Unl.	1.13	0.03	35.18	0.00	Exc. Unl.	1.13	4.06	0.00
Fry's, data set 2 (w/store)	Model 1	1.21	0.01	232.8	0.00	Exc. Unl.	1.22	0.01	163.85	0.00	Exc. Unl.	1.22	29.08	0.00
	Model 2	1.12	0.01	177.9	0.00	Exc. Unl.	1.13	0.01	129.56	0.00	Exc. Unl.	1.13	14.49	0.00
Office Depot	Model 1	1.12	0.07	16.9	0.00	Exc. Unl.	1.15	0.06	20.73	0.00	Exc. Unl.	1.15	2.72	0.01
	Model 2	1.09	0.10	11.1	0.00	Exc. Unl.	1.18	0.07	15.98	0.00	Exc. Unl.	1.18	2.39	0.02
OfficeMax	Model 1	1.12	0.09	12.2	0.00	Exc. Unl.	1.11	0.12	9.18	0.00	Exc. Unl.	1.12	1.31	0.19
	Model 2	0.96	0.07	13.3	0.00	Exc. Unl.	0.97	0.10	9.40	0.00	Exc. Unl.	0.96	-0.60	0.55
PC CONNECTION MD	Model 1	0.91	0.04	23.4	0.00	Exc. Unl.	0.91	0.06	16.49	0.00	Exc. Unl.	0.91	-2.42	0.02
	Model 2	0.91	0.04	24.5	0.00	Exc. Unl.	0.92	0.05	16.99	0.00	Exc. Unl.	0.91	-2.39	0.02
PC CONNECTION SO	Model 1	0.95	0.08	11.3	0.00	Exc. Unl.	1.07	0.05	21.24	0.00	Exc. Unl.	1.07	1.31	0.19
	Model 2	0.93	0.09	10.9	0.00	Exc. Unl.	1.05	0.04	26.09	0.00	Exc. Unl.	1.05	1.30	0.19

Sources: See PT Analysis RETAIL.do. GDP is from <http://www.bea.gov/national/index.htm#gdp>, viewed 1/31/2014. See the text for third party data sources.

Notes:

1. Regressions for retailers are quantity weighted.
2. Model 1: P = f(C, Product Effects, GDP, Vista)
3. Model 2: P = f(C, Product Effects, Time Effects)
4. Current Cost and Lag Cost p-values for the null hypothesis that the pass-through rate equals zero (z:Cost = 0) are from one-sided significance tests.
5. IPCC's likelihood characterization of probability of observing data if no impact assumed, according to the following mapping:

Exc. Unl.
Ext. Unl.
Very Unl.
Unlikely
M.U.T.L.
M.L.T.U.
Likely
Very Lik.
6. "Selected Rate" equals the "Lag Cost" rate unless the coefficients on Cost_{t-1} and Cost_{t-2} are jointly insignificant (using 10% significance level).
7. "Selected Rate" p-values for the null hypothesis that the pass-through rate equals one (z:Cost = 1) are from two-sided significance tests.

Exhibit 34
Pass-Through Directional Estimates with Data Limitations

		Desktops						
		<u>Pass-Through</u>	<u>Std.Err.</u>	<u>z: Cost = 0</u>	<u>p-val</u>	<u>IPCC⁴</u>	<u>z: Cost = 1</u>	<u>p-val</u>
Amazon	Model 1 ¹		0.58		0.48	M.U.T.L.		0.10
	Model 2 ²		0.46		0.04	Ext. Unl.		0.70
Costco						Exc. Unl.		
						Exc. Unl.		
		Laptops						
		<u>Pass-Through</u>	<u>Std.Err.</u>	<u>z: Cost = 0</u>	<u>p-val</u>	<u>IPCC</u>	<u>z: Cost = 1</u>	<u>p-val</u>
Amazon	Model 1		0.54		0.02	Ext. Unl.		0.80
	Model 2		0.28		0.00	Exc. Unl.		0.53
CDW	Model 1					Exc. Unl.		
	Model 2					Exc. Unl.		
Costco						Exc. Unl.		
						Exc. Unl.		
Nebraska Furniture Mart								
Samsung	Model 1	0.95	0.04	23.70	0.00	Exc. Unl.	-1.38	0.17
	Model 2	0.91	0.05	19.45	0.00	Exc. Unl.	-2.01	0.04
Sears						Exc. Unl.		
						Exc. Unl.		
		Drives						
		<u>Pass-Through</u>	<u>Std.Err.</u>	<u>z: Cost = 0</u>	<u>p-val</u>	<u>IPCC</u>	<u>z: Cost = 1</u>	<u>p-val</u>
Amazon	Model 1		0.32		0.00	Exc. Unl.		0.80
	Model 2		0.13		0.00	Exc. Unl.		0.00
Samsung	Model 1	0.84	0.05	16.57	0.00	Exc. Unl.	-3.25	0.00
	Model 2	0.79	0.05	15.30	0.00	Exc. Unl.	-3.96	0.00
Walmart	Model 1	1.37	0.38	3.62	0.00	Exc. Unl.	0.97	0.33
	Model 2	0.77	0.37	2.07	0.02	Ext. Unl.	-0.62	0.53

Sources: See PT_Analysis_OTHERRETAIL.do and PT_Analysis_OTHEROEM.do. GDP is from <http://www.bea.gov/national/index.htm#gdp>, viewed 1/31/2014. See the text for third party data sources.

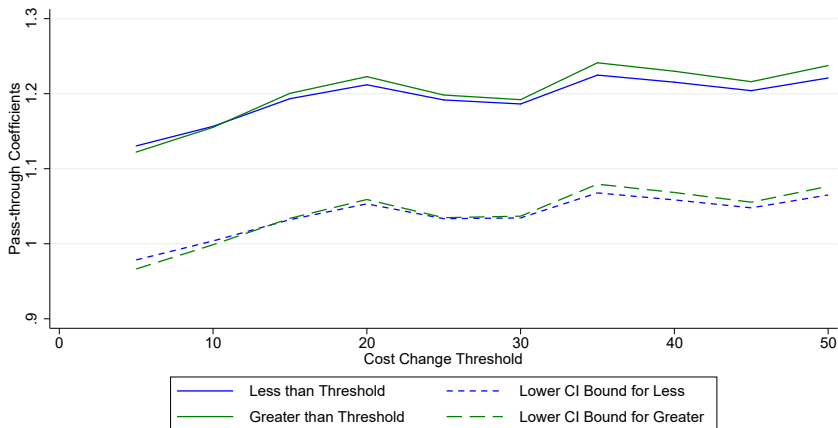
Notes:

1. Regressions for retailers are quantity weighted.
2. Model 1: $P = f(C, \text{Product Effects}, \text{GDP}, \text{Vista})$
3. Model 2: $P = f(C, \text{Product Effects}, \text{Time Effects})$
4. The p-values for the null hypothesis that the pass-through rate equals zero ($z:\text{Cost} = 0$) are from one-sided significance tests.
5. IPCC's likelihood characterization of probability of observing data if no impact assumed, according to the following mapping:

0-1% probability - Exceptionally Unlikely (Exc. Unl.)	Exc. Unl.
0-5% probability - Extremely Unlikely (Ext. Unl.)	Ext. Unl.
0-10% probability - Very Unlikely (Very Unl.)	Very Unl.
0-33% probability - Unlikely	Unlikely
0-50% probability - More Unlikely Than Likely (M.U.T.L.)	M.U.T.L.
50-100% probability - More Likely Than Unlikely (M.L.T.U.)	M.L.T.U.
66-100% probability - Likely	Likely
90-100% probability - Very Likely (Very Lik.)	Very Lik.
6. The p-values for the null hypothesis that the pass-through rate equals one ($z:\text{Cost} = 1$) are from two-sided significance tests.

Exhibit 35-A

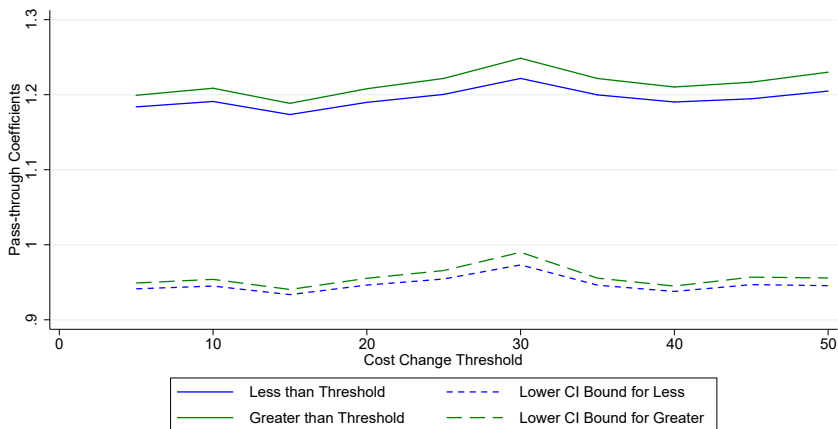
Pass-through Above and Below a Cost Change Threshold, by Threshold
Bestbuy Desktops



Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.

Exhibit 35-B

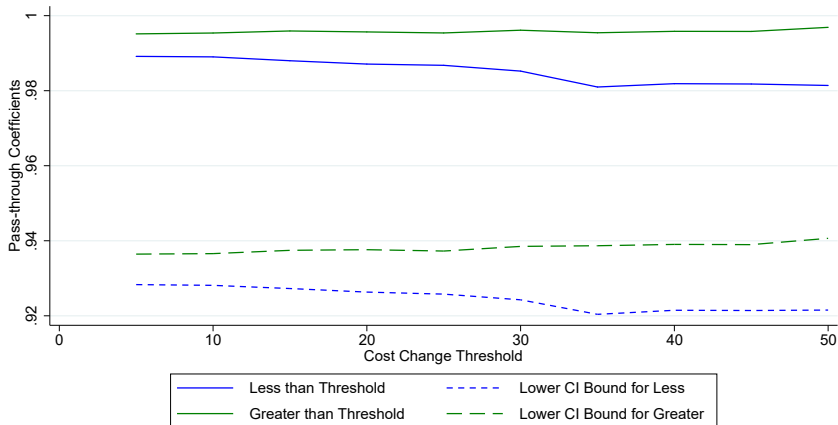
Pass-through Above and Below a Cost Change Threshold, by Threshold
Bestbuy Laptops



Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.

Exhibit 35-C

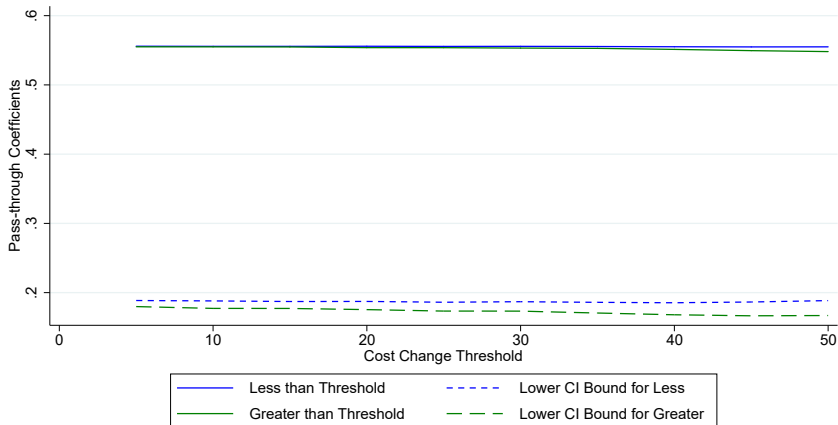
Pass-through Above and Below a Cost Change Threshold, by Threshold
PC Connection, MD Data Desktops



Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.

Exhibit 35-D

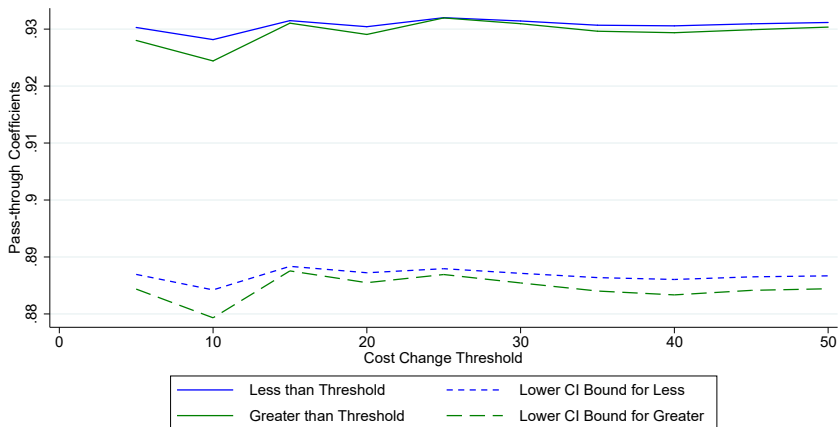
Pass-through Above and Below a Cost Change Threshold, by Threshold
PC Connection, MD Data Laptops



Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.

Exhibit 35-E

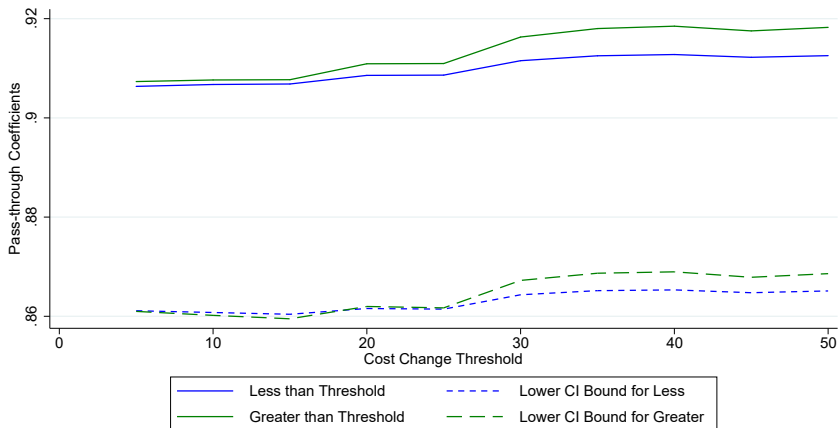
Pass-through Above and Below a Cost Change Threshold, by Threshold
PC Connection, SO Data Desktops



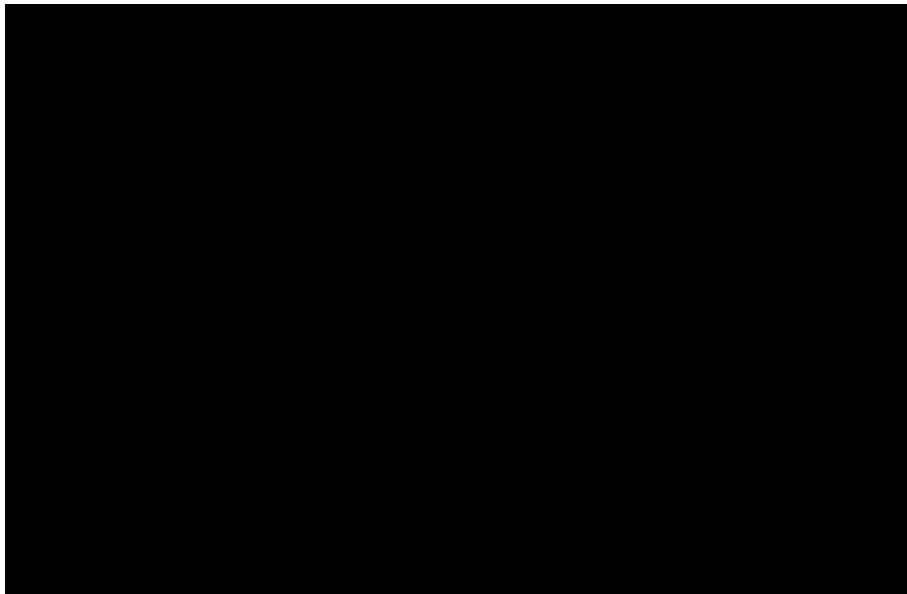
Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.

Exhibit 35-F

Pass-through Above and Below a Cost Change Threshold, by Threshold
PC Connection, SO Data Laptops



Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.



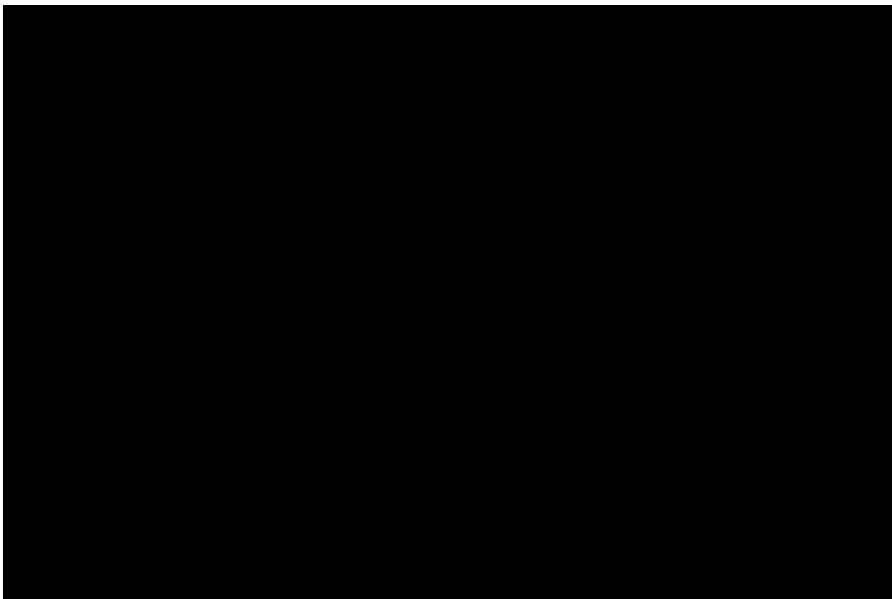
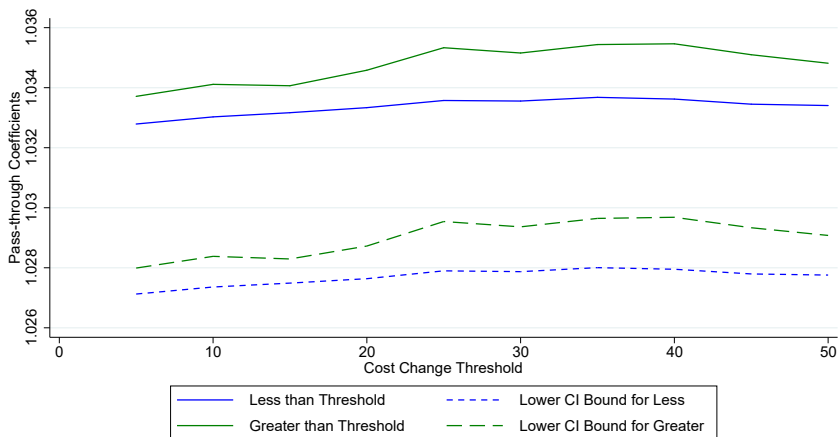


Exhibit 35-I

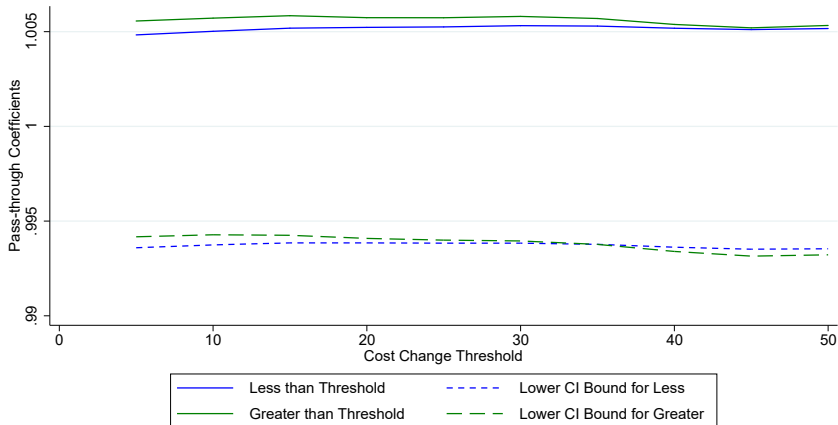
Pass-through Above and Below a Cost Change Threshold, by Threshold
Ingram Desktops



Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.

Exhibit 35-J

Pass-through Above and Below a Cost Change Threshold, by Threshold
Ingram Laptops



Note: The dashed lines indicate the lower bounds of 90% confidence intervals. A value greater than zero indicates that the corresponding pass-through estimate is statistically significantly greater than zero.

Exhibit 36 U.S. Indirect Damages

U.S. Indirect ODD Revenues from Sales of ODDs and ODD Products in the U.S.

		<u>Apr 2003</u>													
		<u>to Dec 2003</u>		<u>2004</u>		<u>2005</u>		<u>2006</u>		<u>2007</u>		<u>2008</u>		<u>Total</u>	
COMBO	Dell & HP	\$	398,587,486	\$	539,788,105	\$	504,221,104	\$	317,821,777	\$	231,662,529	\$	118,024,929	\$	2,110,105,931
DVDROM	Dell & HP	\$	130,691,568	\$	214,325,114	\$	170,000,589	\$	121,443,437	\$	115,523,835	\$	102,315,833	\$	854,300,376
DVDRW	Dell & HP	\$	199,867,125	\$	383,389,232	\$	529,551,594	\$	698,274,801	\$	732,943,824	\$	781,388,807	\$	3,325,415,382
COMBO	Other	\$	226,166,750	\$	286,774,448	\$	210,059,397	\$	167,892,306	\$	99,389,132	\$	52,185,272	\$	1,042,467,306
DVDROM	Other	\$	124,695,820	\$	183,754,218	\$	144,004,410	\$	99,724,473	\$	86,589,433	\$	66,421,496	\$	705,189,849
DVDRW	Other	\$	335,089,973	\$	639,656,422	\$	711,381,998	\$	769,241,020	\$	798,779,735	\$	693,106,715	\$	3,947,255,865
		\$	1,415,098,722	\$	2,247,687,538	\$	2,269,219,094	\$	2,174,397,814	\$	2,064,888,490	\$	1,813,443,052	\$	11,984,734,709

U.S. Indirect Overcharge

		<u>Apr 2003</u>															
		<u>to Dec 2003</u>		<u>2004</u>		<u>2005</u>		<u>2006</u>		<u>2007</u>		<u>2008</u>				<u>Total</u>	
COMBO	Dell & HP	\$	85,664,323	\$	111,245,944	\$	86,821,048	\$	49,892,017	\$	21,246,327	\$	-	\$		\$	354,869,659
DVDROM	Dell & HP	\$	27,935,867	\$	39,132,661	\$	26,934,900	\$	14,089,646	\$	-	\$	-	\$		\$	108,093,074
DVDRW	Dell & HP	\$	-	\$	110,370,338	\$	141,854,763	\$	148,831,997	\$	105,328,578	\$	81,596,928	\$		\$	587,982,605
COMBO	Other	\$	76,102,470	\$	93,762,215	\$	59,252,066	\$	44,820,688	\$	21,859,434	\$	9,009,451	\$		\$	304,806,325
DVDROM	Other	\$	42,630,341	\$	56,748,604	\$	40,633,196	\$	25,239,779	\$	17,094,134	\$	11,502,417	\$		\$	193,848,471
DVDRW	Other	\$	114,510,149	\$	188,715,289	\$	201,162,928	\$	187,921,232	\$	162,282,249	\$	98,810,239	\$		\$	953,402,086
		\$	346,843,151	\$	599,975,051	\$	556,658,901	\$	470,795,358	\$	327,810,723	\$	200,919,036	\$		\$	2,503,002,220

U.S. Weighted Average Overcharge During Period

		<u>Apr 2003</u> <u>to Dec 2003</u>		<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>Total</u>
COMBO	Dell & HP		21.5%	20.6%	17.2%	15.7%	9.2%	0.0%	17.8%
DVDROM	Dell & HP		21.4%	18.3%	15.8%	11.6%	0.0%	0.0%	17.0%
DVDRW	Dell & HP		0.0%	28.8%	26.8%	21.3%	14.4%	10.4%	18.8%
COMBO	Other		33.6%	32.7%	28.2%	26.7%	22.0%	17.3%	29.2%
DVDROM	Other		34.2%	30.9%	28.2%	25.3%	19.7%	17.3%	27.5%
DVDRW	Other		34.2%	29.5%	28.3%	24.4%	20.3%	14.3%	24.2%
			28.5%	26.7%	24.5%	21.7%	16.8%	12.6%	21.9%

Channel-Weighted Pass-Through for the OOD and Computer Market 99.91%

U.S. Indirect Damages

		Apr 2003															
		to Dec 2003		2004		2005		2006		2007		2008				Total	
COMBO	Dell & HP	\$	85,586,300	\$	111,144,622	\$	86,741,972	\$	49,846,576	\$	21,226,976	\$	-	\$		\$	354,546,447
DVDROM	Dell & HP	\$	27,910,424	\$	39,097,019	\$	26,910,368	\$	14,076,813	\$	-	\$	-	\$		\$	107,994,624
DVDRW	Dell & HP	\$	-	\$	110,269,813	\$	141,725,563	\$	148,696,442	\$	105,232,646	\$	81,522,611	\$		\$	587,447,075
COMBO	Other	\$	76,033,157	\$	93,676,817	\$	59,198,100	\$	44,779,865	\$	21,839,525	\$	9,001,246	\$		\$	304,528,710
DVDROM	Other	\$	42,591,514	\$	56,696,918	\$	40,596,188	\$	25,216,791	\$	17,078,565	\$	11,491,940	\$		\$	193,671,915
DVDRW	Other	\$	114,405,854	\$	188,543,409	\$	200,979,710	\$	187,750,075	\$	162,134,444	\$	98,720,244	\$		\$	952,533,736
		\$	346,527,249	\$	599,428,599	\$	556,151,901	\$	470,366,562	\$	327,512,156	\$	200,736,041	\$		\$	2,500,722,508

Sources and Notes

Based on U.S. share of worldwide computer shipment quantity for April 2003 through June 2009 from IDC (IDC WW PC Tracker_2012Q4_NathanInc.xls) with an adjustment for the portion of Portable PCs sold without ODDs and further adjustments for HP and Dell share of U.S. shipments of desktops and portables.

Channel-Weighted Pass-Through combines the individual pass-through estimates using the sellers and the sellers' sales channel segments' market volume.

Exhibit 37A
Overall Average Pass-Through Rate Calculation

	WW Units 2003Q2 to 2008Q4 (000s) ¹	Rest of World Units 2003Q2 to 2008Q4 (000s) ²	US Units 2003Q2 to 2008Q4 (000s) ³	Pass-Through Weighted Average Across All Channels ⁴
Desktops	838,717	632,357	206,360	100.00%
Laptop	468,815	337,027	131,789	100.00%
Drives⁵	16,141	11,967	4,174	92.53%
Average Pass-Through Across All Products and Channels				99.91%

Sources and Notes:

1. Worldwide Shipments Sum of Units for the period 2003Q2 to 2009Q2 from IDC for Desktops and Portable PCs. IDC WW PC Tracker_2012Q4_NathanInc.xls.
2. Rest of World Shipments Sum of Units for the period 2003Q2 to 2009Q2 from IDC for Desktops and Portable PCs. IDC WW PC Tracker_2012Q4_NathanInc.xls.
3. USA Shipments Sum of Units for the period 2003Q2 to 2009Q2 from IDC for Desktops and Portable PCs. IDC WW PC Tracker_2012Q4_NathanInc.xls.
4. See Exhibit 37B
5. Standalone drive units are estimated from desktop and laptop units using an estimate that 1.2194341% of ODD sales are of external drives. This percent was calculated based on internal and external units sold by PLDS, HLDS, Quanta, and TEAC for the period 2003Q2 - 2009Q2.

Exhibit 37B
Average Pass-Through Rate Calculations by Product and Sales Channel

Desktops						
Pass-through rates by sales channel segment¹						
Pass-through sales channel	Computer		Distributors	Retailers	Total pass-through rate²	Weight³
	Distributors	Makers				
Distributors->Computer Makers->Product Distributors->Retailers	102%	112%	102%	103%	100%	1.6%
Distributors->Computer Makers->Retailers	102%	112%		103%	100%	2.6%
Distributors->Computer Makers	102%	112%			100%	5.1%
Computer Makers->Product Distributors->Retailers		112%	102%	103%	100%	16.0%
Computer Makers->Retailers		112%		103%	100%	25.3%
Computer Makers		112%			100%	49.4%
Average					100%	100.0%
Weighted average					100%	

Laptops						
Pass-through rates by sales channel segment¹						
Pass-through sales channel	Computer		Distributors	Retailers	Total pass-through rate²	Weight³
	Distributors	Makers				
Distributors->Computer Makers->Product Distributors->Retailers	102%	106%	102%	104%	100%	1.6%
Distributors->Computer Makers->Retailers	102%	106%		104%	100%	2.6%
Distributors->Computer Makers	102%	106%			100%	5.1%
Computer Makers->Product Distributors->Retailers		106%	102%	104%	100%	16.0%
Computer Makers->Retailers		106%		104%	100%	25.3%
Computer Makers		106%			100%	49.4%
Average					100%	100.0%
Weighted average					100%	

Drives						
Pass-through rates by sales channel segment¹						
Pass-through sales channel	Computer		Distributors	Retailers	Total pass-through rate²	Weight³
	Distributors	Makers				
Distributors->Computer Makers->Product Distributors->Retailers	103%	88%	103%	109%	100%	1.6%
Distributors->Computer Makers->Retailers	103%	88%		109%	99%	2.5%
Distributors->Computer Makers	103%	88%			91%	5.0%
Computer Makers->Product Distributors->Retailers		88%	103%	109%	99%	15.8%
Computer Makers->Retailers		88%		109%	96%	24.8%
Computer Makers		88%			88%	48.5%
Retailer				109%	100%	1.8%
Direct to Consumer					N/A	0.02%
Average (excludes Direct to Consumer)					96%	100.0%
Weighted average (excludes Direct to Consumer)					93%	

Sources and Notes:

1. See Exhibit 37C, Exhibit 37D, and Exhibit 37E. Equal to weighted average pass-through rates by sales channel segment.

2. The total pass-through rate for each channel equals the product of the pass-through rates for each segment of the channel. For example, the total pass-through rate for the uppermost channel for Desktops equals the Distributor rate (102%) x Computer Maker rate (112%) x Distributor rate (102%) x Retailer rate (96%) = 112%. I have been instructed by counsel to cap channel-level pass-through rates at 100%. This approach is conservative, as actual economic damages are based on rates that are not capped.

3. The weight for each channel is the share of total revenue that flows through that channel, which equals the product of the revenue shares that flow through each segment of the channel. See Exhibit 37F.

Exhibit 37C
Pass-Through for Desktops

1. Computer Maker-Desktops	Pass-Through ¹	% of US Shipments	Shipments Source ²			
Acer Retailer	114%	2.3%	IDC Shipment Share * Retailer Share			
Acer to Other Resellers	85%	2.9%	IDC Shipment Share * Other Reseller Share			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
HP Direct	154%	6.5%	IDC Shipment Share * Direct Share			
HP Retailer	90%	16.3%	IDC Shipment Share * Indirect Share			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
Average	119%					
Average (quantity weighted)	112%					
2. Product Distributor-Desktops		Revenue (\$000)	Revenue Source			
Ingram	102%	\$22,600,000	CRN 2003			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
Synnex	101%	\$4,100,000	CRN 2003			
Average	102%					
Average (revenue weighted)	102%					
3. Retailer-Desktops		Vendor	Revenue Source	Represented		2003 - 2008
		Revenue (\$000) ³		Store Type Revenue (\$000) ⁴	TWICE Store Type	Store Type
Best Buy	108%	\$59,883,000	TWICE 2003-2008	\$60,014,212	EA/N Electronics/Appliance stores/Multi-regional	Revenues (\$m)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Fry's	77%	\$5,380,000	TWICE 2003-2008	\$5,391,788	EA/N Electronics/Appliance stores/Multi-regional	\$65,406
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
PC Connection	92%	\$9,285,732	2003-2008 from PC Connection 10-Ks	\$15,551,872.45	CD/I Consumer direct/Internet shopping ⁵	\$26,487
Average	96%					
Average (revenue weighted)	103%		Average (store type revenue weighted)	103%		

Sources and Notes:

1. Pass-through rates are found in V.D. of my report and its Tables and the pass-through work files. Hedonic estimate selected if available, otherwise Fixed-Effects estimate is used.
2. Shares are based on IDC US PC shipments by vendor. Dell and HP's direct and indirect shares are 2005 PC shipment shares. Acer's retail and other reseller shares are based on 2005 Acer and Gateway PC shipment shares by channel. See "Market Making in the PC Industry," Personal Computing Industry Center, March 2007.
3. Vendor revenue includes "notebook and desktop PCs and monitors; hardware such as hard drives, keyboards, PC cards and mice; external drives; printers; digital cameras; and software and peripheral accessories" according to TWICE. TWICE_top25_PC_retailers_2009_summary.pdf.
4. Represented Store Type Revenues = Vendor Revenue / ((Sum of all Vendors in the same TWICE Store Type Revenue in this table's Section 3)) * TWICE Total Store Type Revenues.
5. PC Connection's revenues were not found in the top 25 TWICE lists so they were added to the CD/I segment's total revenue using data from PC Connection's 2004 10-K. Dell data were also removed from this segment's total.

Exhibit 37D
Pass-Through for Laptops

1. Computer Maker-Laptops	Pass-Through¹	% of US Shipments	Shipments Source²			
Acer Retailer	151%	1.7%	IDC Shipment Share * Retailer Share			
Acer to Other Resellers	111%	7.2%	IDC Shipment Share * Other Reseller Share			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
HP Direct	77%	6.9%	IDC Shipment Share * Direct Share			
HP Retailer	108%	17.2%	IDC Shipment Share * Indirect Share			
Toshiba	114%	11.4%	IDC Shipment Share			
Average	111%					
Average (quantity weighted)	106%					
2. Product Distributor-Laptops		Revenue (\$000)	Revenue Source			
Ingram	101%	\$22,600,000	CRN 2003			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
Synnex	102%	\$4,100,000	CRN 2003			
Average	110%					
Average (revenue weighted)	102%					
3. Retailer-Laptops		Vendor Revenue (\$000)³	Revenue Source	Represented Store Type Revenue (\$000)⁴	TWICE Store Type	2003 - 2008 TWICE Store Type Revenues (\$m)
Best Buy	112%	\$59,883,000	TWICE 2003-2008	\$60,014,212	EA/N Electronics/Appliance stores/Multi-regional	\$65,406
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Fry's	116%	\$5,380,000	TWICE 2003-2008	\$5,391,788	EA/N Electronics/Appliance stores/Multi-regional	\$65,406
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
PC Connection	94%	\$9,285,732	2003-2008 from PC Connection 10-Ks	\$15,551,872	CD/I Consumer direct/Internet shopping ⁵	\$26,487
Average	101%					
Average (revenue weighted)	107%		Average (store type revenue weighted)	104%		

Sources and Notes:

1. Pass-through rates are found in V.D. of my report and its Tables and the pass-through work files. Hedonic estimate selected if available, otherwise Fixed-Effects estimate is used.
2. Shares are based on IDC US PC shipments by vendor. Dell and HP's direct and indirect shares are 2005 PC shipment shares. Acer's retail and other reseller shares are based on 2005 Acer and Gateway PC shipment shares by channel. See "Market Making in the PC Industry," Personal Computing Industry Center, March 2007.
3. Vendor revenue includes "notebook and desktop PCs and monitors; hardware such as hard drives, keyboards, PC cards and mice; external drives; printers; digital cameras; and software and peripheral accessories" according to TWICE. TWICE_top25_PC_retailers_2009_summary.pdf.
4. Represented Store Type Revenues = Vendor Revenue / ((Sum of all Vendors in the same TWICE Store Type Revenue in this table's Section 3)) * TWICE Total Store Type Revenues.
5. PC Connection's revenues were not found in the top 25 TWICE lists so they were added to the CD/I segment's total revenue using data from PC Connection's 2004 10-K. Dell data were also removed from this segment's total.

Exhibit 37E
Pass-Through for Drives

1. Computer Maker-Drives	Pass-Through¹	% of US Shipments	Shipments Source²			
██████████	██████████	██████████	██████████			
NEC	68%	0.3%	Max Projected % Based on IDC			
Panasonic	98%	0.3%	Max Projected % Based on IDC			
Average	85%					
Average (quantity weighted)	88%					
2. Product Distributor-Drives		Revenue (\$000)	Revenue Source			
ASI	101%	\$1,000,000	CRN 2003			
Ingram	104%	\$22,600,000	CRN 2003			
██████████	██████████	██████████	██████████			
Synnex	103%	\$4,100,000	CRN 2003			
Average	97%					
Average (revenue weighted)	103%					
3. Retailer-Drives		Vendor Revenue (\$000)³	Revenue Source	Represented Store Type Revenue (\$000)⁴	TWICE Store Type	2003 - 2008 TWICE Store Type Revenues (\$m)
Best Buy	104%	\$59,883,000	TWICE 2003-2008	\$60,014,212	EA/N Electronics/Appliance stores/Multi-regional	\$65,406
Fry's	140%	\$5,380,000	TWICE 2003-2008	\$5,391,788	EA/N Electronics/Appliance stores/Multi-regional	\$65,406
██████████	██████████	██████████	██████████	██████████	██████████	██████████
Office Depot	118%	\$8,390,000	TWICE 2003-2008	\$13,449,848	HO Home office stores	\$21,438
OfficeMax	96%	\$4,983,000	TWICE 2003-2008	\$7,988,152	HO Home office stores	\$21,438
PC Connection	102%	\$9,285,732	2003-2008 from PC Connection 10-Ks	\$15,551,872	CD/I Consumer direct/Internet shopping ⁵	\$26,487
Average	112%					
Average (revenue weighted)	107%		Average (store type revenue weighted)	109%		

Sources and Notes:

1. Pass-through rates are found in V.D. of my report and its Tables and the pass-through work files. Hedonic estimate selected if available, otherwise Fixed-Effects estimate is used.
2. Shares are based on IDC US PC shipments by vendor. Dell's stand-alone drives sales are assumed to be 100% direct.
3. Vendor revenue includes "notebook and desktop PCs and monitors; hardware such as hard drives, keyboards, PC cards and mice; external drives; printers; digital cameras; and software and peripheral accessories" according to TWICE. TWICE_top25_PC_retailers_2009_summary.pdf.
4. Represented Store Type Revenues = Vendor Revenue / ((Sum of all Vendors in the same TWICE Store Type Revenue in this table's Section 3)) * TWICE Total Store Type Revenues.
5. PC Connection's revenues were not found in the top 25 TWICE lists so they were added to the CD/I segment's total revenue using data from PC Connection's 2004 10-K. Dell data were also removed from this segment's total.

Exhibit 37F
Revenue Share by Sales Channel Segment

Shares by Supply Channel Segment	Desktops	Laptops	Drives
<u>ODD Manufacturer Sales¹</u>			
A. Share to Distributors	N/A	N/A	9.1%
B. Share to Computer Makers	N/A	N/A	89.1%
G. Share to Retailers	N/A	N/A	1.8%
H. Direct to Consumer	N/A	N/A	0.02%
<u>Computer Maker Sales²</u>			
C. Direct Sales Share	54.46%	54.46%	54.46%
D. Indirect Sales Share	45.54%	45.54%	45.54%
<u>Computer Maker Indirect Sales³</u>			
E. Share to Product Distributors	38.8%	38.8%	38.8%
F. Share to Retailers	61.2%	61.2%	61.2%
 Shares by Sales Channel⁴	 Desktops	 Laptops	 Drives
Distributors->Computer Makers->Product Distributors->Retailers ⁵	1.6%	1.6%	1.6%
Distributors->Computer Makers->Retailers ⁶	2.6%	2.6%	2.5%
Distributors->Computer Makers ⁷	5.1%	5.1%	5.0%
Computer Makers->Product Distributors->Retailers ⁸	16.0%	16.0%	15.8%
Computer Makers->Retailers ⁹	25.3%	25.3%	24.8%
Computer Makers ¹⁰	49.4%	49.4%	48.5%
Retailers ¹¹	N/A	N/A	1.8%
Direct to Consumer ¹²	N/A	N/A	0.02%

Sources and Notes:

1. Defendant direct sales share by classified customer type. Computer Makers (89.1%) = Computer OEM (82.3%) + ODM/EMS (4.0%) + Other OEM (2.8%).
2. "Market Making in the PC Industry," Personal Computing Industry Center, March 2007, p. 5. For Desktops, Laptops, and Drives, product makers' direct sales share is the share in 2005 (54.46%). Computer makers' indirect sales share equals 100% - Computer makers' direct sales share.
3. For Desktops, Laptops, and Drives, distributor and retailer shares are based on an estimate of HP's sales to distributors as a share of its total indirect product sales from 2003 to 2009.
4. The share of total revenue that flows through each sales channel equals the product of the revenue shares that flow through each segment of the channel.
5. $A \times D \times E$ for Drives; $A \times D \times E / (A + B)$ for Desktops and Laptops, using Drives' A and B.
6. $A \times D \times F$ for Drives; $A \times D \times F / (A + B)$ for Desktops and Laptops, using Drives' A and B.
7. $A \times C$ for Drives; $A \times C / (A + B)$ for Desktops and Laptops, using Drives' A and B.
8. $B \times D \times E$ for Drives; $B \times D \times E / (A + B)$ for Desktops and Laptops, using Drives' A and B.
9. $B \times D \times F$ for Drives; $B \times D \times F / (A + B)$ for Desktops and Laptops, using Drives' A and B.
10. $B \times C$ for Drives; $B \times C / (A + B)$ for Desktops and Laptops, using Drives' A and B.
11. G.
12. H.

Exhibit 38A
Total Damages to Covered Class Members
(dollars in millions)

	Apr-Dec						
	2003	2004	2005	2006	2007	2008	Total
Total Damages ¹	\$346.5	\$599.4	\$556.2	\$470.4	\$327.5	\$200.7	\$2,500.7
Covered State Share ²	50.4%	50.4%	50.4%	50.4%	50.4%	50.3%	
Covered Segment Share ³	83.5%	84.8%	85.4%	86.1%	85.7%	85.6%	
Covered Class Damages⁴	\$145.9	\$256.2	\$239.5	\$204.4	\$141.4	\$86.6	\$1,073.8

Notes/Sources:

1. See Exhibit 36.
2. Population share of class states based on U.S. Census Bureau data. See Exhibit 38B.
3. Covered customer segment share based on IDC PC spending data and DOE education spending data. Excludes government and public education segments. See Exhibit 38C and Exhibit 38D.
4. Covered Class Damages = Total Damages * Covered State Share * Covered Segment Share.

Exhibit 38B
U.S. Population Shares by Class State Status

Population Shares	2003	2004	2005	2006	2007	2008	Average
Class States	50.39%	50.41%	50.44%	50.44%	50.39%	50.35%	50.40%
Other States	49.61%	49.59%	49.56%	49.56%	49.61%	49.65%	49.60%
Total US Population	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Population	2003	2004	2005	2006	2007	2008	Average
Class States	146,171,131	147,611,217	149,049,710	150,490,804	151,780,794	153,109,349	149,702,168
Other States	143,936,802	145,194,081	146,466,889	147,889,108	149,450,413	150,984,617	147,320,318
Total US Population	290,107,933	292,805,298	295,516,599	298,379,912	301,231,207	304,093,966	297,022,486

Class States	2003	2004	2005	2006	2007	2008
Arizona	5,510,364	5,652,404	5,839,077	6,029,141	6,167,681	6,280,362
California	35,253,159	35,574,576	35,827,943	36,021,202	36,250,311	36,604,337
District of Columbia	568,502	567,754	567,136	570,681	574,404	580,236
Florida	17,004,085	17,415,318	17,842,038	18,166,990	18,367,842	18,527,305
Hawaii	1,251,154	1,273,569	1,292,729	1,309,731	1,315,675	1,332,213
Kansas	2,723,004	2,734,373	2,745,299	2,762,931	2,783,785	2,808,076
Maine	1,306,513	1,313,688	1,318,787	1,323,619	1,327,040	1,330,509
Massachusetts	6,422,565	6,412,281	6,403,290	6,410,084	6,431,559	6,468,967
Michigan	10,041,152	10,055,315	10,051,137	10,036,081	10,001,284	9,946,889
Minnesota	5,053,572	5,087,713	5,119,598	5,163,555	5,207,203	5,247,018
Missouri	5,709,403	5,747,741	5,790,300	5,842,704	5,887,612	5,923,916
Montana	919,630	930,009	940,102	952,692	964,706	976,415
Nebraska	1,738,643	1,749,370	1,761,497	1,772,693	1,783,440	1,796,378
Nevada	2,248,850	2,346,222	2,432,143	2,522,658	2,601,072	2,653,630
New Hampshire	1,279,840	1,290,121	1,298,492	1,308,389	1,312,540	1,315,906
New Mexico	1,877,574	1,903,808	1,932,274	1,962,137	1,990,070	2,010,662
New York	19,175,939	19,171,567	19,132,610	19,104,631	19,132,335	19,212,436
North Carolina	8,422,501	8,553,152	8,705,407	8,917,270	9,118,037	9,309,449
Oregon	3,547,376	3,569,463	3,613,202	3,670,883	3,722,417	3,768,748
Tennessee	5,847,812	5,910,809	5,991,057	6,088,766	6,175,727	6,247,411
Utah	2,360,137	2,401,580	2,457,719	2,525,507	2,597,746	2,663,029
Vermont	617,858	619,920	621,215	622,892	623,481	624,151
West Virginia	1,812,295	1,816,438	1,820,492	1,827,912	1,834,052	1,840,310
Wisconsin	5,479,203	5,514,026	5,546,166	5,577,655	5,610,775	5,640,996

Other States	2003	2004	2005	2006	2007	2008
Alabama	4,503,491	4,530,729	4,569,805	4,628,981	4,672,840	4,718,206
Alaska	648,414	659,286	666,946	675,302	680,300	687,455
Arkansas	2,724,816	2,749,686	2,781,097	2,821,761	2,848,650	2,874,554
Colorado	4,528,732	4,575,013	4,631,888	4,720,423	4,803,868	4,889,730
Connecticut	3,484,336	3,496,094	3,506,956	3,517,460	3,527,270	3,545,579
Delaware	818,003	830,803	845,150	859,268	871,749	883,874
Georgia	8,622,793	8,769,252	8,925,922	9,155,813	9,349,988	9,504,843
Idaho	1,363,380	1,391,802	1,428,241	1,468,669	1,505,105	1,534,320
Illinois	12,556,006	12,589,773	12,609,903	12,643,955	12,695,866	12,747,038
Indiana	6,196,638	6,233,007	6,278,616	6,332,669	6,379,599	6,424,806
Iowa	2,941,999	2,953,635	2,964,454	2,982,644	2,999,212	3,016,734
Kentucky	4,117,170	4,146,101	4,182,742	4,219,239	4,256,672	4,289,878
Louisiana	4,521,042	4,552,238	4,576,628	4,302,665	4,375,581	4,435,586
Maryland	5,496,269	5,546,935	5,592,379	5,627,367	5,653,408	5,684,965
Mississippi	2,868,312	2,889,010	2,905,943	2,904,978	2,928,350	2,947,806
New Jersey	8,601,402	8,634,561	8,651,974	8,661,679	8,677,885	8,711,090
North Dakota	638,817	644,705	646,089	649,422	652,822	657,569
Ohio	11,434,788	11,452,251	11,463,320	11,481,213	11,500,468	11,515,391
Oklahoma	3,504,892	3,525,233	3,548,597	3,594,090	3,634,349	3,668,976
Pennsylvania	12,374,658	12,410,722	12,449,990	12,510,809	12,563,937	12,612,285
Rhode Island	1,071,342	1,074,579	1,067,916	1,063,096	1,057,315	1,055,003
South Carolina	4,150,297	4,210,921	4,270,150	4,357,847	4,444,110	4,528,996
South Dakota	763,729	770,396	775,493	783,033	791,623	799,124
Texas	22,030,931	22,394,023	22,778,123	23,359,580	23,831,983	24,309,039
Virginia	7,366,977	7,475,575	7,577,105	7,673,725	7,751,000	7,833,496
Washington	6,104,115	6,178,645	6,257,305	6,370,753	6,461,587	6,562,231
Wyoming	503,453	509,106	514,157	522,667	534,876	546,043

Notes/Sources:

State population data from U.S. Census Bureau, Table 1: Intercensal Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2010 (ST-EST00INT-01), released September 2011.

List of covered class states provided by counsel.

Exhibit 38C
Class Segment Shares
(dollars in millions)

IDC Segment Shares	Apr-Dec 2003	2004	2005	2006	2007	2008	Average
Class Segments	83.5%	84.8%	85.4%	86.1%	85.7%	85.6%	85.2%
Other Segments	16.5%	15.2%	14.6%	13.9%	14.3%	14.4%	14.8%
Total Segments	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

IDC Segments¹	Apr-Dec 2003	2004	2005	2006	2007	2008	Average
Class Segments	\$26,903	\$36,059	\$38,609	\$42,807	\$45,767	\$44,172	\$39,053
Other Segments	\$5,298	\$6,478	\$6,616	\$6,887	\$7,648	\$7,401	\$6,721
Total Segments	\$32,201	\$42,536	\$45,225	\$49,694	\$53,415	\$51,574	\$45,774

Class Segments¹	Apr-Dec 2003	2004	2005	2006	2007	2008
Private Education ²	\$679	\$833	\$899	\$946	\$1,076	\$1,036
Home	\$11,818	\$15,522	\$16,781	\$20,175	\$22,422	\$23,436
Small Office (1-9)	\$2,418	\$3,283	\$3,462	\$3,868	\$4,299	\$3,899
Small Business (10-99)	\$2,922	\$3,886	\$4,402	\$4,908	\$4,850	\$4,267
Medium Business (100-499)	\$2,926	\$4,049	\$4,252	\$4,150	\$4,263	\$3,750
Large Business (500-999)	\$2,571	\$3,017	\$3,073	\$3,007	\$3,451	\$3,041
Very Large Business (1000+)	\$3,569	\$5,468	\$5,741	\$5,753	\$5,407	\$4,743

Other Segments¹	Apr-Dec 2003	2004	2005	2006	2007	2008
Public Education ²	\$3,000	\$3,685	\$3,975	\$4,184	\$4,756	\$4,581
Government	\$2,298	\$2,793	\$2,641	\$2,703	\$2,892	\$2,820

Notes/Sources:

- Dollar figures reflect U.S. spending on desktops and notebooks by customer segment. See "IDC WW PC Tracker_2012Q4_NathanInc.xls."
- Private/public education split based on U.S. education spending data from the U.S. Department of Education ("DOE"). See Exhibit 38D.
Private Education = IDC education segment value * DOE private education spending share.
Public Education = IDC education segment value * DOE public education spending share.

Exhibit 38D
Public and Private Education Spending in the United States, 2003-2008
(in \$ millions)

School Year	K-12 Education			Higher Education			Total Education		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
2003-2004	\$474,242	\$39,300	\$513,542	\$205,069	\$111,682	\$316,751	\$679,311	\$150,982	\$830,293
2004-2005	\$499,569	\$41,400	\$540,969	\$215,794	\$119,225	\$335,019	\$715,363	\$160,625	\$875,988
2005-2006	\$528,269	\$43,400	\$571,669	\$226,550	\$127,027	\$353,577	\$754,819	\$170,427	\$925,246
2006-2007	\$562,195	\$46,300	\$608,495	\$238,829	\$136,710	\$375,539	\$801,024	\$183,010	\$984,034
2007-2008	\$597,314	\$49,100	\$646,414	\$261,046	\$147,444	\$408,490	\$858,360	\$196,544	\$1,054,904
Total	\$2,661,588	\$219,500	\$2,881,088	\$1,147,288	\$642,088	\$1,789,376	\$3,808,876	\$861,588	\$4,670,464
Share	92.4%	7.6%	100.0%	64.1%	35.9%	100.0%	81.6%	18.4%	100.0%

Source:

U.S. Department of Education, National Center for Education Statistics, 2013 Digest of Education Statistics, Table 106.20, "Expenditures of educational institutions, by level and control of institution: Selected years, 1899-1900 through 2012-13,"
http://nces.ed.gov/programs/digest/d13/tables/dt13_106.20.asp, accessed 1/25/2017.

EXHIBIT 57

CONFIDENTIAL – RESTRICTED

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

IN RE OPTICAL DISK DRIVE
ANTITRUST LITIGATION

MDL DOCKET NO. 2143
(Civil Action No. 3:10-MD-2143 RS)

This Document Relates to:

ALL INDIRECT PURCHASER ACTIONS

Expert Report of Edward A. Snyder, Ph.D.

April 3, 2017

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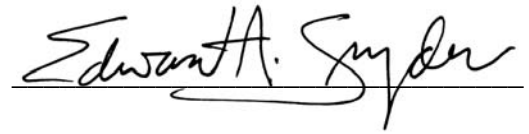
- i. Event-specific overcharges on bid prices in certain direct purchaser procurement events that were allegedly subject to bid-rigging, event-specific price fixing, or event-specific market allocation, and
- ii. Embedded overcharges on all procurements as a result of information sharing that IPPs allege facilitated price coordination, non-event specific agreements, and industry-wide customer/market allocation.

C. Assignment

9. I have been retained by Defendants and I have been asked by their counsel to estimate damages, if any, incurred by IPPs as a result of the alleged conduct among Defendants.³ The damages formula in this context involves three components:
 - i. Estimated overcharges, if any, i.e., the differences between actual prices and but-for world prices (absent the alleged collusion), imposed by Defendants;
 - ii. Estimation of average pass-on rates, i.e., the rates by which direct purchasers and others increase the prices they charged in response to changes in costs, including the alleged overcharges in the prices paid for ODDs; and
 - iii. Volumes of purchases that are relevant to IPPs' damages claims.
10. Regarding alleged overcharges, my assignment is to estimate average overcharges, if any, on ODDs sold by Defendants to their direct purchasers as well as to evaluate the opinions offered by Professor Kenneth Flamm – one of the experts retained by IPPs – regarding average overcharges throughout the alleged conspiracy period. Regarding pass-on rates, my assignment is to estimate average pass-on rates by intermediaries at various stages of the relevant distribution chains. Regarding volumes of purchases by the IPPs, my assignment is to calculate total purchases and prices paid for the relevant time period, products, and geographic ship-to locations.
11. My assignment does not extend to evaluating the opinions offered by Plaintiffs' economic experts concerning the extent to which alleged overcharges at the ODD manufacturing level

³ Specifically, I have been retained by BenQ Corporation, BenQ America Corp., Samsung Electronics Co. Ltd., Toshiba Corporation, Toshiba Samsung Storage Technology Corporation, and Toshiba Samsung Storage Technology Corporation Korea.

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A handwritten signature in black ink, reading "Edward A. Snyder", written over a horizontal line.

Edward A. Snyder

April 3, 2017

EXHIBIT 58

Kevin Murphy Confidential
April 30, 2017

1

1 UNITED STATES DISTRICT COURT
2 NORTHERN DISTRICT OF CALIFORNIA
3 SAN FRANCISCO DIVISION

3 IN RE OPTICAL DISK DRIVE)
4 PRODUCTS ANTITRUST)
5 LITIGATION,)
6)
7 -----)
8 This Document Relates to:)
9 ALL INDIRECT PURCHASER)
10 ACTIONS)

No. 3:10-md-2143 RS

9 The videotaped deposition of KEVIN M.
10 MURPHY, Ph.D., called for examination, taken
11 pursuant to the Federal Rules of Civil Procedure
12 of the United States District Courts pertaining to
13 the taking of depositions, taken before JANET L.
14 ROBBINS, CSR No. 84-2207, Certified Shorthand
15 Reporter of the State of Illinois, at Latham &
16 Watkins LLP, 330 North Wabash Avenue, Chicago,
17 Illinois, on April 30, 2017, at 9:01 a.m.

18
19
20 *****RESTRICTED CONFIDENTIAL*****
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24
25

April 30, 2017

13

1 Toshiba or some Samsung-related entity is, in
2 fact, indirectly paying you?

3 A. I -- I would believe they would be. I
4 would -- I would believe that ultimately I would
5 be hired by the defendants in the case -- in this
6 case or plaintiffs, if I was working for
7 plaintiffs.

8 I'm just saying I don't have direct
9 knowledge of the flow of funds or the contractual
10 arrangements because I'm not an employee of
11 Charles River, so I do not enter contracts on
12 their behalf.

13 Q. So given the fact that you don't have
14 direct knowledge of the economic relationship
15 between the defendants, the lawyers and yourself,
16 you don't want to speculate, right?

17 A. I'm just telling you what I know. I've
18 already given you what I think is my best
19 knowledge. And I don't know. I don't consider it
20 really that speculative, but I'm trying to be
21 honest about what I'm saying.

22 Q. And who are the defendants that you're
23 offering an opinion on behalf of?

24 A. I don't have the full list. I
25 didn't -- that wasn't something I thought too

1 closely about. I did an economic analysis. And I
2 think -- I believe it's the defendants that are
3 represented here.

4 But that wasn't important for purposes
5 of my analysis. I was analyzing the marketplace
6 and what happened in the marketplace. So who the
7 defendants were was really not something I cared
8 about.

9 Q. So as you sit here today, you know that
10 some group of defendants are paying you, but you
11 don't know who?

12 A. I don't know the full list because
13 there's -- you know, there are cases where it's a
14 company that is involved in a joint venture or
15 something like that. I -- I don't know all the
16 list.

17 And like I said, that wasn't something
18 I focused on. I would have done basically the
19 same analysis no matter who hired me. So it
20 wasn't something I focused who was paying the
21 bill. It didn't really matter.

22 Q. Would it matter if you had a conflict
23 that somehow would create a disqualifying matter
24 for you to -- in order -- so you needed to know
25 who you were offering an opinion on behalf of?

Kevin Murphy, Confidential
April 30, 2017

323

1 CERTIFICATE

2 OF

3 CERTIFIED SHORTHAND REPORTER

4
5 I, JANET L. ROBBINS, a Certified
6 Shorthand Reporter of the State of Illinois, CSR
7 License No. 84-2207, do hereby certify:

8 That previous to the commencement of
9 the examination of the witness, the witness was
10 duly sworn to testify the whole truth concerning
11 the matters herein;

12 That the foregoing deposition
13 transcript was stenographically reported by me and
14 was thereafter reduced to typewriting under my
15 personal direction and constitutes a true and
16 accurate record of the testimony given and the
17 proceedings had at the aforesaid deposition;

18 That the said deposition was taken
19 before me at the time and place specified;

20 That I am not a relative or employee or
21 attorney or counsel for any of the parties herein,
22 nor a relative or employee of such attorney or
23 counsel for any of the parties hereto, nor am I
24 interested directly or indirectly in the outcome
25 of this action.

April 30, 2017

324

1 IN WITNESS WHEREOF, I do set my hand and
2 affix my seal this 2nd day of May, 2017.

3
4 *Janet L. Robbins*

5
6 JANET L. ROBBINS, CSR, RPR

7 CSR License No. 84-2207
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EXHIBIT 59

May 08, 2017

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE: OPTICAL DISK DRIVE)
)
ANTITRUST LITIGATION) Case No.
) 3:10-MD-2143 RS
)
)

CONFIDENTIAL RESTRICTED

VOLUME I

VIDEOTAPED DEPOSITION OF ANDRES V. LERNER, PH.D.

Los Angeles, California

Monday, May 8, 2017

REPORTED BY:

Kristi Caruthers, CLR, CSR No. 10560

May 08, 2017

20

1 you are aware of in the indirect purchaser case on
2 which you're testifying on behalf of?

3 A. Sure. Toshiba, Samsung, PLDS,
4 TSST, I believe HLDS. That's -- without looking
5 at my report, that's the ones I can recall,
6 sitting here.

7 Q. Do you believe that you're
8 testifying on behalf of the Quanta defendants?

9 A. I believe I have not been retained
10 by the Quanta defendants.

11 Q. And one of the law firms
12 representing you today is Latham Watkins; is that
13 right?

14 A. That's correct.

15 Q. Sorry. I couldn't hear you.

16 A. I said that is correct.

17 Q. And you've worked previously with
18 Latham; is that right?

19 A. I think I have. Yes, I have worked
20 with Latham before.

21 Q. How many times have you worked with
22 Latham & Watkins?

23 A. I can think of one matter in which
24 I've worked with them. It's the --

25 Q. What matter is that?

May 08, 2017

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1 State of California)
2) ss
County of Los Angeles)

3
4 I, KRISTI CARUTHERS, a Certified
5 Shorthand Reporter duly licensed and qualified in
6 and for the State of California, do hereby certify
7 that there came before me on the 8th day of May,
8 2017 at 1999 Avenue of the Stars, Suite 700,
9 Los Angeles, California 90067, the following named
10 person, to-wit: Andres V. Lerner, Ph.D., who was
11 duly sworn to testify the truth, the whole truth,
12 and nothing but the truth of knowledge touching
13 and concerning the matters in controversy in this
14 cause; and that he was thereupon examined under
15 oath and his examination reduced to typewriting
16 under my supervision; that the deposition is a
17 true record of the testimony given by the witness.

18 I further certify that pursuant to
19 FRCP Rule 30(e)(1) that the signature of the
20 deponent:

21 (X) was requested by the deponent or a
22 party before the completion of the deposition;

23 () was not requested by the deponent
24 or a party before the completion of the deposition.

25 I further certify that I am neither

May 08, 2017

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1 attorney or counsel for, nor related to or
2 employed by any of the parties to the action in
3 which this deposition is taken, and further that I
4 am not a relative employee of any attorney or
5 counsel employed by the parties hereto, or
6 financially interested in the action.

7 CERTIFIED TO BY ME on this 10th day
8 of May, 2017.

9
10 

11 KRISTI CARUTHERS
12 CSR NO. 10560
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EXHIBIT 60

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10 Attorneys for Defendant
QUANTA STORAGE INC.

12 UNITED STATES DISTRICT COURT
13 NORTHERN DISTRICT OF CALIFORNIA
14 SAN FRANCISCO DIVISION
15

16 IN RE OPTICAL DISK DRIVE
17 PRODUCTS ANTITRUST LITIGATION

Case No. 3:10-md-02143 RS

**QUANTA STORAGE INC.'S FIRST
AMENDED OBJECTIONS AND
RESPONSES TO INDIRECT PURCHASER
PLAINTIFFS' FIRST SET OF
INTERROGATORIES TO DEFENDANTS**

18 This Document Relates To:

19 ALL INDIRECT-PURCHASER
20 ACTIONS

22 PROPOUNDING PARTY: INDIRECT PURCHASER PLAINTIFF

23 RESPONDING PARTY: DEFENDANT QUANTA STORAGE INC.

24 SET NO.: ONE

25 Pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure and Rule 34-1 of the
26 Civil Local Rules of the United States District Court for the Northern District of California,
27 Defendant Quanta Storage Inc. ("QSI") hereby amends its first set of objections and responses to
28

1 Indirect Purchaser Plaintiffs' First Set of Interrogatories to Defendants that were first sent to
2 counsel for QSI by email on November 4, 2010 (the "Interrogatories"), as follows:

3 **PRELIMINARY STATEMENT**

4 QSI incorporates by reference the Preliminary Statement set forth in its first set of
5 objections and responses to the Interrogatories.

6 **OBJECTIONS TO PREFACE**

7 QSI incorporates by reference the Objections to Preface set forth in its first set of
8 objections and responses to the Interrogatories.

9 **OBJECTIONS TO DEFINITIONS**

10 QSI incorporates by reference the Objections to Definitions set forth in its first set of
11 objections and responses to the Interrogatories.

12 **OBJECTIONS TO INSTRUCTIONS**

13 QSI incorporates by reference the Objections to Instructions set forth in its first set of
14 objections and responses to the Interrogatories.

15 **ADDITIONAL OBJECTIONS TO EACH**
16 **OF THE INTERROGATORIES, SEVERALLY**

17 QSI incorporates by reference the Additional Objections to Each of the Interrogatories
18 Severally set forth in its first set of objections and responses to the Interrogatories.

19 **FURTHER OBJECTIONS AND RESPONSES**
20 **TO INDIVIDUAL INTERROGATORIES**

21 The following specific amended responses and objections are made in addition to all of
22 the objections stated above (collectively "the General Objections"), which are incorporated into
23 each individual response, severally. While a given individual response may repeat a General
24 Objection for emphasis, the failure to include any particular General Objection in any individual
25 response shall not be interpreted as a waiver of any Objection to that Interrogatory. Subject to
26 and without waiving the foregoing objections in any way (all of which are incorporated by
27 reference into each of the following Responses as if fully set forth therein), and to the extent QSI
28 understands each individual Interrogatory, QSI hereby submits its specific First Amended

1 Objections and Responses to Indirect Purchaser Plaintiffs' First Set of Interrogatories to
 2 Defendants as follows:

3
 4 INTERROGATORY NO. 1:

5 State the name, address, and relationship to YOU of each PERSON who prepared or
 6 assisted in the preparation of the responses to these interrogatories.

7 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 1:

8 QSI incorporates by reference the Objections to Interrogatory No. 1 set forth in its first set
 9 of objections and responses to the Interrogatories.

10 Subject to and without in any way waiving the foregoing objections, and to the extent it
 11 understands this Interrogatory, QSI further responds as follows: The following people, all of
 12 whom can be reached through counsel, were involved with the amended responses to discovery
 13 and to responses to discovery after the first sets of Interrogatories and requests for Production of
 14 Documents:

NAME	TITLE
Kevin Cheng	Manager
William Wang	Director
Lita Chen	Manager
Jerry Fan	Deputy Manager
Canolyn Chang	Deputy Manager
Haw Chen	Vice President
Wesley Cheng	Manager
Hiko Lin	Manager
Shu-Ming Tseng	Manager
Virginia Lin	Senior Specialist
Kathy Ji	Specialist
Cherry Chen	Section Manager
Maggie Chang	Deputy Director

23
 24 INTERROGATORY NO. 2:

25 Identify each current and former EMPLOYEE who has, or had, managerial responsibility
 26 for the pricing of any ODDs or ODD Product during the RELEVANT TIME PERIOD.
 27
 28

FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 2:

QSI incorporates by reference the Objections to Interrogatory No. 2 set forth in its first set of objections and responses to the Interrogatories.

Subject to and without in any way waiving the foregoing objections, and to the extent it understands this Interrogatory, QSI further responds as follows: The following managerial level people had responsibility for pricing since 2004.

NAME	Title and Tenure in Each Position Held
Voka Chen	General Manager (Optical Storage Business Unit) [06/2004-2008]
Haw Chen	Associated VP of Sales (Optical Storage Business Unit) [06/2007-2008]
	General Manager & Vice President (Optical Storage Business Unit) [07/2008 – Present]
David Chao	Associate VP of Sales (Optical Storage Business Unit) [2004-2005]
Anita Yin	Manager [08/2004-2005]
	Deputy Director of Sales (Optical Storage Business Unit) [08/2005; 06/2006; 05/2007-08/2008]
Andy Chang	Deputy Director of Sales (Optical Storage Business Unit) [06/2006-05/2007]
Anita Chang	Manager [2004-09/2006]

INTERROGATORY NO. 3:

Identify each EMPLOYEE who, during the RELEVANT TIME PERIOD, attended any trade association MEETINGS relating to ODDs and ODD Products where there were MEETINGS with YOUR competitors and state with respect to each EMPLOYEE:

- (a) the trade association MEETING attended;
- (b) the DATES of attendance;
- (c) any offices, chairs or committee positions held in each of the trade associations;

and

1 (d) the DATES which those offices, chairs or committee positions were held.

2 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 3:

3 QSI incorporates by reference the Objections to Interrogatory No. 3 set forth in its first set
4 of objections and responses to the Interrogatories.

5 Subject to and without in any way waiving the foregoing objections, and to the extent it
6 understands these Interrogatories, QSI further responds to Interrogatory No. 3 as follows: QSI is
7 not aware of attending any such trade association meetings.

8
9 INTERROGATORY NO. 4:

10 Identify each actual or proposed or discussed AGREEMENT between YOU and any
11 producer of ODDs and ODD Products relating to prices, production output and/or inventory
12 levels, and order of auction finishing place,-during the RELEVANT TIME PERIOD. For every
13 such instance, state:

- 14 (a) the identity of the participants and all PERSONS with knowledge thereof;
- 15 (b) when such agreement was entered into;
- 16 (c) where such AGREEMENT was entered into;
- 17 (d) the terms of such AGREEMENT; and
- 18 (e) the identities of all of YOUR EMPLOYEES with knowledge of such
- 19 AGREEMENTS.

20 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 4:

21 QSI incorporates by reference the Objections to Interrogatory No. 4 set forth in its first set
22 of objections and responses to the Interrogatories.

23 Subject to and without in any way waiving the foregoing objections, and to the extent it
24 understands these Interrogatories, QSI further responds to Interrogatory No. 4 as follows: Other
25 than agreements between QSI and its customers which refer to a contract price for ODDs, QSI is
26 not aware of any such Agreements.

INTERROGATORY NO. 5:

Identify any MEETING or COMMUNICATION BETWEEN YOU and other producers of ODDs and ODDs during the RELEVANT TIME PERIOD regarding the pricing of, price increase announcements concerning, terms or conditions of sales with respect to, profit margins or market share of, auctions for, and/or dynamic bidding events with respect to, ODDs and ODD Products. For each such MEETING or COMMUNICATION:

- (a) provide the date and location of the MEETING or COMMUNICATION;
- (b) identify the PERSON(S) who initiated, called, organized, attended or participated in the MEETING or COMMUNICATION;
- (c) describe the subject matter discussed and any information YOU provided or received;
- (d) describe every action taken by YOU as a result of the MEETING or COMMUNICATION; and
- (e) identify all Persons with knowledge relating to the MEETING or COMMUNICATION.

FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 5:

QSI incorporates by reference the Objections to Interrogatory No. 5 set forth in its first set of objections and responses to the Interrogatories. By way of example as to the Interrogatory's overly broad and unduly burdensome scope, because the nature of QSI's business is as a seller of ODDs, virtually every communication made in the ordinary course of business would arguably be responsive to this Interrogatory. Subject to and without in any way waiving the foregoing objections, and to the extent it understands these Interrogatories, QSI further responds to Interrogatory No. 5 as follows: QSI is not aware of any such meetings regarding the subject matters listed. QSI did attend some Supplier meetings hosted by certain OEMs where the OEM may have discussed some of the topics listed in this Interrogatory as part of the program. Such meetings run by the OEMs and where the OEMs may have presented some information include the following:

1	MEETING DATE	LOCATION	PURPOSE	ATTENDEES
2	2/2/2007	Shanghai	Dell Year End Party	All Dell Suppliers & Dell Staff (QSI: Michael Chuang, Shu-ming)
3				
4	11/19/2007	Shanghai	Dell DiscP Wave 3 Supplier Training	All Dell Suppliers & Dell Staff (QSI: Amy Wu, Shu-ming)
5				
6	1/25/2008	Shanghai	Dell Year End Party	All the Suppliers & Dell Staff (QSI: Shu-ming)
7				
8	1/16/2009	Taipei	MSI Year End Party	All MSI Suppliers & MSI Staff (QSI: Gina Liu, Shu-ming)
9				
10	2008/5/15- 5/16	Houston	2008 HP Supplier Summit	All HP Suppliers & HP Staff (QSI: Sally Huang, Voka Chen)
11				
12	2008/5	Houston	2007 HP Supplier Summit	All HP Suppliers & HP Staff (QSI: Phoebe Chu, Voka Chen, Andy Chang)
13				
14				

15 INTERROGATORY NO. 6:

16 Identify each instance during the RELEVANT TIME PERIOD in which YOU or any
17 other producer of ODDs and ODD Products instituted a price increase or decrease for each ODD
18 or ODD Products, and for each such instance:

- 19 (a) when such price increase or decrease was announced publicly;
20 (b) when such price increase or decrease was implemented;
21 (c) the amount of the price increase or decrease; and
22 (d) any explanation given for such price increase or decrease.

23 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 6:

24 QSI incorporates by reference the Objections to Interrogatory No. 6 set forth in its first set
25 of objections and responses to the Interrogatories.

26 Subject to and without in any way waiving the foregoing objections, and to the extent it
27 understands these Interrogatories, QSI further objects to Interrogatory No. 6 to the extent it seeks
28 information regarding other producers of ODDs or ODD Products. QSI further responds to

Interrogatory No. 6 as follows: QSI has no announced or instituted price increases or decreases for ODDs or ODD Products. All prices are negotiated on a case-by-case basis.

INTERROGATORY NO. 7:

Identify and describe all joint ventures, partnerships and/or other business relationships, during the RELEVANT TIME PERIOD, relating to ODDs and ODD Products between YOU and any other producer of ODDs and ODD Products.

FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 7:

QSI incorporates by reference the Objections to Interrogatory No. 7 set forth in its first set of objections and responses to the Interrogatories.

Subject to and without in any way waiving the foregoing objections, and to the extent it understands this Interrogatory, QSI further responds as follows: QSI has no partnerships or joint ventures. QSI has or has had business relationships with Sony Optiarc, Philips, Pioneer, Panasonic Network Systems Co. Ltd., and Dell related to development and/or production of ODDs for such entities. In addition, QSI has business relationships with its customers.

INTERROGATORY NO. 8:

Identify every channel both internally and outside YOUR company used by YOU to sell, market, or distribute ODDs or ODD Products during the RELEVANT TIME PERIOD. If YOU used different channels at different points within the RELEVANT TIME PERIOD, identify the time period when YOU used each channel to sell, market, or distribute ODDs and/or ODD Products.

FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 8:

QSI incorporates by reference the Objections to Interrogatory No. 8 set forth in its first set of objections and responses to the Interrogatories, including its objection that the phrase “every channel both internally and outside YOUR company” is undefined, vague, and ambiguous.

Subject to and without in any way waiving the foregoing objections, QSI further responds as follows: QSI formerly had a subsidiary NU that handled some distribution in the United States

1 from approximately 2003 through approximately 2005. Since QSI serves primarily as a contract
2 manufacturer for certain other ODD manufacturers or OEMs, QSI does not have other wholesale
3 or retail distribution channels.

4
5 INTERROGATORY NO. 9:

6 Identify the ODDs or ODD Products YOU produced, sold, marketed, or distributed during
7 the RELEVANT TIME PERIOD, including brand name, product number, application, technical
8 specification and information sufficient to interpret the product numbers (*i.e.*, product keys and/or
9 cross-reference guides).

10 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 9:

11 QSI incorporates by reference the Objections to Interrogatory No. 9 set forth in its first set
12 of objections and responses to the Interrogatories.

13 Subject to and without in any way waiving the foregoing objections, and to the extent it
14 understands this Interrogatory, QSI further responds as follows: QSI will provide model numbers
15 for its ODDs since 2004.

16
17 INTERROGATORY NO. 10:

18 Provide YOUR sales of ODDs and ODD Products into the United States and globally for
19 each month from January 1, 2000 to the present. For each month during this period, state the
20 volume of sales, the U.S. dollar value of sales, the unit sale price, the per unit cost to produce
21 ODDs and ODD Products, the per unit cost to distribute ODDs and ODD Products (including
22 overseas freight, tariff, customs, duties, inland freight, storage, insurance, dealer commissions),
23 and the per unit profit earned.

24 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 10:

25 QSI incorporates by reference the Objections to Interrogatory No. 10 set forth in its first
26 set of objections and responses to the Interrogatories.

27 Subject to and without in any way waiving the foregoing objections, and to the extent it
28 understands this Interrogatory, QSI further responds as follows: The parties have agreed to hold

1 this interrogatory in abeyance, and therefore QSI provides no response at this time. QSI reserves
2 the right to provide a response in the future.

3
4 INTERROGATORY NO. 11:

5 If YOU offered ODDs or ODD Products for sale in a spot market during the RELEVANT
6 TIME PERIOD, provide the same information set forth in Interrogatory No. 10 above.

7 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 11:

8 QSI incorporates by reference the Objections to Interrogatory No. 11 set forth in its first
9 set of objections and responses to the Interrogatories, including its objection that the term “spot
10 market” is undefined, vague, and ambiguous.

11 Subject to and without in any way waiving the foregoing objections, QSI is willing to
12 meet and confer regarding the definition of “spot market.”

13
14 INTERROGATORY NO. 12:

15 Provide YOUR monthly aggregate purchases of ODDs and ODD Products from ~~each of~~
16 ~~the~~ DEFENDANTS, for the period January 1, 2000 to the present.

17 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 12:

18 QSI incorporates by reference the Objections to Interrogatory No. 12 set forth in its first
19 set of objections and responses to the Interrogatories.

20 Subject to and without in any way waiving the foregoing objections, and to the extent it
21 understands this Interrogatory, QSI further responds as follows: The parties have agreed to hold
22 this interrogatory in abeyance, and therefore QSI provides no response at this time. QSI reserves
23 the right to provide a response in the future.

24
25 INTERROGATORY NO. 13:

26 State whether any DOCUMENTS or information related to YOUR ODDs and ODD
27 Product production, marketing, sales and distribution was destroyed, discarded, erased, deleted,
28 purged, or otherwise lost. If YOUR answer is in any way in the affirmative:

- 1 (a) describe in detail the contents of each such DOCUMENT or information and the
2 date it was destroyed, discarded, erased, deleted, purged or lost;
- 3 (b) identify each PERSON who had any role or responsibility in destroying,
4 discarding, erasing, purging, deleting or losing of each such DOCUMENT or
5 information; and
- 6 (c) describe in detail the circumstances under which each such DOCUMENT or
7 information was destroyed, discarded, erased, deleted, purged, or lost.

8 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 13:

9 QSI incorporates by reference the Objections to Interrogatory No. 13 set forth in its first
10 set of objections and responses to the Interrogatories.

11 Subject to and without in any way waiving the foregoing objections, and to the extent it
12 understands these Interrogatories, QSI further responds to Interrogatory No. 13 as follows: QSI is
13 not aware of any relevant documents being destroyed, discarded, erased, deleted, purged, or
14 otherwise lost after the commencement of its obligation to preserve documents.

15
16 INTERROGATORY NO. 14:

17 Identify all steps YOU have taken to preserve DOCUMENTS.

18 FIRST AMENDED OBJECTIONS AND RESPONSE TO INTERROGATORY NO. 14:

19 QSI incorporates by reference the Objections to Interrogatory No. 14 set forth in its first
20 set of objections and responses to the Interrogatories.

21 Subject to and without in any way waiving the foregoing objections, and to the extent it
22 understands this Interrogatory, QSI further responds as follows: QSI has taken steps to preserve
23 documents as required by the Federal Rules of Civil Procedure.

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3 DATED: August 10, 2012

By: Minda R. Schechter

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22 *Attorneys for Defendant*
23 *Quanta Storage Inc.*
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VERIFICATION

I, Haw Chen state that I am authorized to make this verification on behalf of
DEFENDANT QUANTA STORAGE INC.; that I have read the foregoing QUANTA STORAGE
INC.'S FIRST AMENDED OBJECTIONS AND RESPONSES TO INDIRECT PURCHASER
PLAINTIFFS' FIRST SET OF INTERROGATORIES TO DEFENDANTS and have answered
them as a representative of DEFENDANT QUANTA STORAGE INC.; that said responses are
based on information obtained from DEFENDANT QUANTA STORAGE INC.'s employees and
representatives; and that to the best of my knowledge, information, and belief said responses are
true and accurate.

I declare under penalty of perjury under the laws of the United States of America that the
foregoing is true and correct.

Executed AUG 10, 2012

Haw Chen

EXHIBIT 61

**CONNOLLY BOVE LODGE & HUTZ LLP**

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WEB www.cblh.com

November 9, 2012

Via Email

Shana Scarlett, Esq.
 Hagens Berman Sobol Shapiro LLP
 715 Hearst Avenue, Suite 202
 Berkeley, CA 94710

**Re: *In re Optical Disk Drive Products Antitrust Litig.*,
Case No. 3:10-md-2143 RS (N.D. Cal.)**

Dear Shana:

We provide you with the information below pursuant to the Order Re Locations of Depositions dated October 24, 2012 (Dkt. No. 707) for the list of witnesses included in your October 26, 2012 letter.

Haw Chen, Nelson Chang, Phoebe Chu, Shi-Chi Ho, Sally Huang, Kathy Ji, Virginia Lin, Gina Liu, Kirsty Peng, Shu-Ming Tseng, Vivid Wen, and Evon Yu are all presently employed by Quanta Storage, Inc. ("Quanta") and located at Guishan Township, Taoyuan County, Taiwan (R.O.C.). As for the remaining witnesses in your letter, they are not presently employed by Quanta and their last known addresses are as follows:

Name	Geographic Location (last known address)
Chang, Andy	3F., No.50-1, Ln. 114, Sec. 7, Zhongshan N. Rd., Shilin Dist., Taipei City 111, Taiwan (R.O.C.)
Chang, Anita	3F., No.13, Ln. 234, Zhonghe St., Beitou Dist., Taipei City 112, Taiwan (R.O.C.)
Chao, David	2F., No.20, Ln. 389, Fuyuan St., Songshan Dist., Taipei City 105, Taiwan (R.O.C.)
Chen, Voka	3F., No.12, Ln. 131, Xiamen St., Zhongzheng Dist., Taipei City 100, Taiwan (R.O.C.)
Lin, Caroline	#82, 7th Street, Building 1, Taoyuan City, Taoyuan County, 330 Taiwan (R.O.C.)



CONNOLLY BOVE LODGE & HUTZ LLP

ATTORNEYS AT LAW

Shana Scarlett, Esq.
November 9, 2012
Page 2

Name	Geographic Location (last known address)
Yin, Anita	No.53, Aly. 89, Ln. 112, Zhongqing Rd., Beitun Dist., Taichung City 406, Taiwan (R.O.C.)

In addition, based on our investigation to date, we do not believe that any witness on Plaintiffs' list of witnesses has no knowledge, or marginal knowledge, of the relevant facts. That being said, it is difficult for Quanta to assess whether, from Plaintiffs' point of view, any of these individuals have no knowledge, or marginal knowledge, of the relevant facts. Quanta reserves the right to supplement this response as its investigation continues and if Plaintiffs narrow the issues they intend to pursue in this litigation and articulate what specific information may be relevant to those issues.

Lastly, none of the witnesses on Plaintiffs' list has informed Quanta that he or she intends to assert his or her Fifth Amendment privilege against compelled self-incrimination at this time. If Quanta becomes aware of a witness's intent to assert the Fifth Amendment privilege, Quanta will provide Plaintiffs notice within five (5) days of becoming aware of this.

Very truly yours,

/s/ Keith A. Walter

Keith A. Walter

cc: Cadio R. Zirpoli, Esq.

5067501

EXHIBIT 62

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Attorneys for Defendant
QUANTA STORAGE, INC.

**UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA, WESTERN DIVISION**

IN RE OPTICAL DISK DRIVE
PRODUCTS ANTITRUST
LITIGATION

Case No. CV15-05940 DSF (JEMx)

**DEFENDANT QUANTA
STORAGE, INC.'S
SUPPLEMENTAL RESPONSE TO
SPECIAL INTERROGATORIES,
NOS. 4 AND 5 PROPOUNDED BY
INDIRECT PURCHASER
PLAINTIFFS**

This Document Relates to:

ALL INDIRECT PURCHASER
ACTIONS

The Hon. Dale S. Fischer

**PROPOUNDING PARTY: Plaintiff INDIRECT PURCHASER
PLAINTIFFS**

**RESPONDING PARTY: Defendant QUANTA STORAGE AMERICA
INC. AND QUANTA STORAGE INC.**

SET NO.: One

Pursuant to Rule 36 of the Federal Rules of Civil Procedure, Defendant
QUANTA STORAGE AMERICA INC. AND QUANTA STORAGE INC.

("Responding Party") hereby submit these objections and responses to the First Set
of Requests for Admission propounded by Plaintiff INDIRECT PURCHASER
PLAINTIFFS ("Propounding Party").

PRELIMINARY STATEMENT

Responding Party has not completed its investigation of the facts relating to this case, its discovery or its preparation for trial. All responses and objections contained herein are based only upon information that is presently available to and specifically known by Responding Party. It is anticipated that further discovery, independent investigation, legal research and analysis will supply additional facts and add meaning to known facts, as well as establish entirely new factual conclusions and legal contentions, all of which may lead to substantial additions to, changes in and variations from the responses set forth herein.

These responses, while based on diligent inquiry and investigation by Responding Party, reflect only the current state of Responding Party's knowledge, understanding, and belief, based upon the information reasonably available to it at this time. As this action proceeds, and further investigation and discovery are conducted, additional or different facts and information could be revealed to Responding Party. Moreover, Responding Party anticipates that Propounding Party may make legal or factual contentions presently unknown to and unforeseen by Responding Party which may require Responding Party to adduce further facts in rebuttal to such contentions. Consequently, Responding Party may not yet have knowledge and may not fully understand the significance of information potentially pertinent to these responses. Accordingly, these responses are provided without prejudice to Responding Party's right to rely upon and use any information that it subsequently discovers, or that was omitted from these responses as a result of mistake, inadvertence, surprise, or excusable neglect. Without in any way obligating itself to do so, Responding Party reserves the right to modify, supplement, revise, or amend these responses, and to correct any inadvertent errors or omissions which may be contained herein, in light of the information that Responding Party may subsequently obtain or discover.

Nothing in this response should be construed as an admission by Responding

1 Party with respect to the admissibility or relevance of any fact or document, or of
2 the truth or accuracy of any characterization or statement of any kind contained in
3 Propounding Party's requests.

4 Each of the following responses is made solely for the purpose of this action.
5 Each response is subject to all objections as to relevance, materiality, and
6 admissibility, and to any and all objections on any ground that would require
7 exclusion of any response if it were introduced in court. All objections and grounds
8 are expressly reserved and may be interposed at the time of trial, hearing, or
9 otherwise. Furthermore, each of the objections contained herein is incorporated by
10 reference as though fully set forth in each response.

11 The following objections and responses are made without prejudice to
12 Responding Party's right to produce at trial, or otherwise, evidence regarding any
13 subsequently discovered information. Responding Party accordingly reserves the
14 right to modify and amend any and all responses herein as research is completed and
15 contentions are made.

16 Nothing contained herein is to be construed as a waiver of any attorney-client
17 privilege, work product doctrine, or any other applicable privilege or doctrine. To
18 the extent any interrogatory may be construed as calling for disclosure of
19 information protected from discovery by the attorney-client privilege, the work
20 product doctrine, or any other privilege or protection, a continuing objection to each
21 and every such interrogatory is hereby interposed.

22 **GENERAL OBJECTIONS**

23 Responding Party generally objects to the Requests for Admission as follows:

24 1. Responding Party objects generally to the Requests for Admission to
25 the extent that they seek to elicit information that is neither relevant to the subject
26 matter of this action, nor reasonably calculated to lead to the discovery of admissible
27 evidence;

28 2. Responding Party objects generally to the Requests for Admission to

1 the extent that they are unreasonably overbroad in scope, and thus burdensome and
2 oppressive, in that each such request seeks information pertaining to items and
3 matters that are not relevant to the subject matter of this action, or, if relevant, so
4 remote therefrom as to make its disclosure of little or no practical benefit to
5 Propounding Party, while placing a wholly unwarranted burden and expense on
6 Responding Party in locating, reviewing and producing the requested information;

7 3. Responding Party objects generally to the Requests for Admission to
8 the extent that they are burdensome and oppressive, in that ascertaining the
9 information necessary to respond to them would require the review and compilation
10 of information from multiple locations, and voluminous records and files, thereby
11 involving substantial time of employees of Responding Party and great expense to
12 Responding Party, whereas the information sought to be obtained by Propounding
13 Party would be of little use or benefit to Propounding Party;

14 4. Responding Party objects generally to the Requests for Admission to
15 the extent that they are vague, uncertain, overbroad and without limitation as to time
16 or specific subject matter;

17 5. Responding Party objects generally to the Requests for Admission to
18 the extent that they seek information at least some of which is protected by the
19 attorney-client privilege or the attorney work-product doctrine, or both;

20 6. Responding Party objects generally to the Requests for Admission to
21 the extent that they seek to have Responding Party furnish information that is a
22 matter of the public record, and therefore is equally available to the Propounding
23 Party as they are to Responding Party; and

24 7. Responding Party objects generally to the Requests for Admission to
25 the extent that they seek to have Responding Party furnish information that is
26 proprietary to Responding Party and contain confidential information;

27 8. Responding Party objects generally to the Requests for Admission to
28 the extent that they seek admissions on behalf of "former directors, officers,

employees, agents, attorneys, consultants, and representatives; and all persons either acting or purporting to act on behalf of the above, or any of them.” Responding party does not

9. Responding Party expressly incorporates each of the foregoing General Objections into each specific response to the requests set forth below as if set forth in full therein. An answer to a request is not intended to be a waiver of any applicable specific or general objection to such request.

Without waiver of the foregoing, Responding Party further responds as follows:

RESPONSES TO SPECIAL INTERROGATORIES

SPECIAL INTERROGATORY NO. 4:

Identify each actual, proposed or discussed agreement between YOU and any producer of ODDs and ODD PRODUCTS RELATING TO prices, production output and/or inventory levels, and order of auction finishing place, during the RELEVANT TIME PERIOD. For every such instance, state:

- (a) The identity of the participants and all PERSONS with knowledge thereof;
- (b) When such agreement was entered into;
- (c) Where such agreement was entered into;
- (d) The terms of such agreement; and
- (e) the identities of all of YOUR EMPLOYEES with knowledge of such agreements.

SUPPLEMENTAL RESPONSE TO SPECIAL INTERROGATORY NO. 4:

QSI incorporates by reference the Objections to Interrogatory No. 4 set forth in its first set of objections and responses to the instant interrogatories. Subject to and without waiving the foregoing objections, there were several occasions that meetings took place with vendors for marketing purposes. The known meetings are as follows:

Meeting Date	Location	Purpose	Attendees
2/2/2007	Shanghai	Dell year end party	All Dell Suppliers and Dell Staff
11/19/2007	Shanghai	Dell DiscP wave 3 supplier training	All Dell Suppliers and Dell Staff
7/17/2008	Taipei	Lunch	PLDS/Jerry Hsieh, Fannie Fredie Hsieh, Susie & QSI/Haw Chen, Shu-ming and Wesley
10/23/2008	Taipei	Lunch	PLDS/Jerry Hsieh, Fannie, Susie & QSI/Haw Chen, Sally Huang, and Shu-ming
1/25/2008	Shanghai	Dell year end party	All Dell Suppliers and Dell Staff
10/15/2008	Taipei	Marketing information sharing	HLDS Bruce Jeong/QSI Sally Huang, Shu-ming, Tzeng and Evon Yu
12/12/2008	Taipei	Marketing information sharing	YOSUN Tango Lin/QSI Sally Evon All MSI Suppliers & MSI staff
1/16/2009	Taipei	MSI year-end party	ALL MSI Suppliers & MSI Staff

Conversations involved include key persons characters, personal background. However, there was no discussion, agreement or any sort of, regarding prices, product output and any listed topics. Given the fact, the relevant time period, has been gone for years, responding party lacks specific knowledge and information pertaining to each specific conversation that took place.

SPECIAL INTERROGATORY NO. 5:

Identify any MEETING or COMMUNICATION BETWEEN YOU and other producers of ODDS and ODD PRODUCTS during the RELEVANT TIME PERIOD regarding the pricing of, price increase announcements concerning, terms or conditions of sales with respect to, profit margins or market share of, auctions for,

1 and/or dynamic bidding events with respect to ODDs and ODD PRODUCTS. For
2 each such MEETING or COMMUNICATION:

3 (a) Provide the DATE and location of the MEETING or
4 COMMUNICATION;

5 (b) Identify the PERSON(S) who initiated, called, organized, attended or
6 participated in the MEETING or COMMUNICATION;

7 (c) Describe the subject matter discussed and any information YOU
8 provided or received;

9 (d) Describe every action taken by YOU as a result of the MEETING or
10 COMMUNICATION; and

11 (e) Identify all PERSONS with knowledge relating to the MEETING or
12 COMMUNICATION.

13 **SUPPLEMENTAL RESPONSE TO SPECIAL INTERROGATORY NO. 5:**

14 QSI incorporates by reference the Objections to Interrogatory No. 4 set forth
15 in its first set of objections and responses to the instant interrogatories. Subject to
16 and without waiving the foregoing objections, responding party states that no such
17 meeting or communication took place.

18 DATED: January 6, 2017

**MANNING & KASS
ELLROD, RAMIREZ, TRESTER LLP**

21 By: /s/ Paul Hanna

22 Eugene J. Egan

23 Paul Hanna

24 Attorneys for Defendant

25 Quanta Storage, Inc.

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VERIFICATION

STATE OF CALIFORNIA, COUNTY OF LOS ANGELES

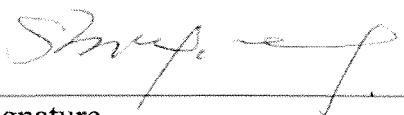
I have read the foregoing **DEFENDANT QUANTA STORAGE, INC.'S SUPPLEMENTAL RESPONSE TO SPECIAL INTERROGATORIES, NOS. 4 AND 5 PROPOUNDED BY INDIRECT PURCHASER PLAINTIFFS** and know its contents.

I am a agent of Quanta Storage, Inc., a party to this action. The matters stated in the foregoing document are true of my own knowledge except as to those matters which are stated on information and belief, and as to those matters I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on January 4, 2017, at Los Angeles, California.

Shu-ming.Tzeng
Print Name of Signatory


Signature

PROOF OF SERVICE

STATE OF CALIFORNIA, COUNTY OF LOS ANGELES

At the time of service, I was over 18 years of age and not a party to this action. I am employed in the County of Los Angeles, State of California. My business address is 801 S. Figueroa St, 15th Floor, Los Angeles, CA 90017-3012.

On January 6, 2017, I served true copies of the following document(s) described as **DEFENDANT QUANTA STORAGE, INC.'S SUPPLEMENTAL RESPONSE TO SPECIAL INTERROGATORIES, NOS. 4 AND 5 PROPOUNDED BY INDIRECT PURCHASER PLAINTIFFS** on the interested parties in this action as follows:

SEE ATTACHED SERVICE LIST

X BY E-MAIL OR ELECTRONIC TRANSMISSION: I caused a copy of the document(s) to be sent from e-mail address bfl@manningllp.com to the persons at the e-mail addresses listed in the Service List. The document(s) were transmitted at or before 5:00 p.m. I did not receive, within a reasonable time after the transmission, any electronic message or other indication that the transmission was unsuccessful.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on January 6, 2017, at Los Angeles, California.



Brenda Leonardo

SERVICE LIST
In Re Optical Disk Drive Antitrust Litigation
USDC ND Cal. Case No. 3:10-md-2143 RS

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12 UNITED STATES DISTRICT COURT
13 NORTHERN DISTRICT OF CALIFORNIA
14 SAN FRANCISCO DIVISION
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16 IN RE OPTICAL DISK DRIVE PRODUCTS
ANTITRUST LITIGATION
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No. 3:10-md-2143 RS

INDIRECT PURCHASER PLAINTIFFS'
THIRD AMENDED NOTICE OF
DEPOSITION OF QUANTA STORAGE
INC. PURSUANT TO FEDERAL RULE
OF CIVIL PROCEDURE 30(b)(6)

DATE ACTION FILED: Oct. 27, 2009

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21 This Document Relates to:
22 INDIRECT PURCHASER ACTION
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1 PLEASE TAKE NOTICE that pursuant to Rule 30(b)(6) of the Federal Rules of Civil
2 Procedure, Indirect Purchaser Plaintiffs will take the oral deposition of Quanta Storage Inc. by
3 stenographic and videographic means on March 9-10, 2017 at 9:30 a.m. at the offices of Hagens
4 Berman Sobol Shapiro LLP, 715 Hearst Avenue, Berkeley, California, or at such other date, time and
5 place as may be mutually agreed upon by the parties. The deposition will be taken before an officer
6 authorized to administer oaths pursuant to Rule 28 of the Federal Rules of Civil Procedure, and will
7 continue from day to day (Sundays and holidays excluded) until completed.

8 Pursuant to Federal Rule of Civil Procedure 30(b)(6), defendant Quanta Storage Inc. is to
9 designate and produce for deposition at that time one or more of their officers, directors, employees
10 or agents who are most qualified to testify on their behalf as to the subject matters identified in
11 Schedule A attached hereto.

12 DATED: February 21, 2017

HAGENS BERMAN SOBOL SHAPIRO LLP

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SCHEDULE A

I. DEFINITIONS AND INSTRUCTIONS

1. The terms “YOU” and “YOUR” means the responding party, its predecessors, successors, subsidiaries, departments, divisions, joint ventures and/or affiliates, including, without limitation, any organization or entity which the responding party manages or controls, together with all present and former directors, officers, employees, agents, representatives or any persons acting or purporting to act on behalf of the responding parties.

2. The term “COMMUNICATION” means any transmission or exchange of information between two or more persons, orally or in writing, and includes, without limitation, any conversation or discussion whether face-to-face or by means of telephone, telegraph, telex, telecopier, electronic or “e-mail,” or other media, and the circumstances by which YOU came into possession of the document evidencing the communication.

3. The term “EMPLOYEE” means any current or former officer, director, executive, manager, secretary, staff member, messenger, agent or other person who is or was employed by a DEFENDANT.

4. The term “MEETING” means, without limitation, any assembly, convocation, encounter, or contemporaneous presence of two or more persons for any purpose, whether planned or arranged, scheduled or not.

5. The terms “RELATING TO” and “IN RELATION TO” shall mean, in whole or in part, discussing, describing, pertaining to, deriving from, arising from, resulting from, referring or alluding to, reflecting, containing, analyzing, reporting on, commenting on, evidencing, constituting, setting forth, considering, recommending, or concerning.

II. SUBJECT AREAS

In accordance with Federal Rule of Civil Procedure 30(b)(6), YOU are advised of YOUR duty to designate one or more of YOUR officers, directors, employees, managing agents or other persons most qualified to testify on YOUR behalf with respect to the following matters during the period April 1, 2003 to December 31, 2008 (unless a time period is specified otherwise):

1 1. YOUR antitrust policies, and all training provided to YOUR EMPLOYEES during
2 the period 2003 to 2009.

3 2. Identify each actual, proposed or discussed agreement between YOU and any
4 producer of ODDs RELATING TO prices, production output and/or inventory levels, and order of
5 auction finishing place, during the RELEVANT TIME PERIOD. For every such instance, state:

- 6 (a) The identity of the participants and all PERSONS with knowledge thereof;
7 (b) When such agreement was entered into;
8 (c) Where such agreement was entered into;
9 (d) The terms of such agreement; and
10 (e) The identities of all of YOUR EMPLOYEES with knowledge of such
11 agreements.

12 3. Identify any MEETING or COMMUNICATION BETWEEN YOU and other
13 producers of ODDs during the RELEVANT TIME PERIOD regarding the pricing of, price increase
14 announcements concerning, terms or conditions of sales with respect to, profit margins or market
15 share of, auctions for, and/or dynamic bidding events with respect to ODDs. For each such
16 MEETING or COMMUNICATION:

- 17 (a) Provide the DATE and location of the MEETING or COMMUNICATION;
18 (b) Identify the PERSON(S) who initiated, called, organized, attended or
19 participated in the MEETING or COMMUNICATION;
20 (c) Describe the subject matter discussed and any information YOU provided or
21 received;
22 (d) Describe every action taken by YOU as a result of the MEETING or
23 COMMUNICATION; and
24 (e) Identify all PERSONS with knowledge relating to the MEETING or
25 COMMUNICATION.

DECLARATION OF SERVICE BY ELECTRONIC MAIL

I, the undersigned, declare:

That declarant is and was, at all times herein mentioned, a resident of the United States and employed in the City of Berkeley, in the County of Alameda, over the age of 18 years, and not a party to or interested party in the within action; that declarant's business address is 715 Hearst Avenue, Suite 202, Berkeley, California 94710.

That on February 21, 2017, declarant served by e-mail INDIRECT PURCHASER PLAINTIFFS' THIRD AMENDED NOTICE OF DEPOSITION OF QUANTA STORAGE INC. PURSUANT TO FEDERAL RULE OF CIVIL PROCEDURE 30(b)(6) to the parties' e-mail addresses listed on the attached service list.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 21st day of February 2017, at Berkeley, California.

s/ Jeaneth Decena
JEANETH DECENA

In Re Optical Disk Drive Antitrust Litigation

No. 3:10-md-2143 RS (N.D. Cal.)

E-MAIL SERVICE LIST

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EXHIBIT 64

March 10, 2017

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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

_____)
IN RE: OPTICAL DISK DRIVE)
_____)
ANTITRUST LITIGATION) MDL No. 3:10-MD-2143 RS
_____)
_____)

VOLUME II
CONFIDENTIAL RESTRICTED
DEPOSITION OF QUANTA STORAGE, INC., DESIGNEE
SHU MING TZENG
Berkeley, California
Friday, March 10, 2017

Reported by: LANA L. LOPER, RMR, CRR, CCP,
CME, CLR, CSR No. 9667

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01:48 1 December 2008 time period. Is that right?

2 MS. PALOZOLA: Object to form.

3 THE WITNESS: No, I did not know that they were
4 in contact.

01:49 5 BY MS. SCARLETT:

6 Q And you have never asked Haw Chen whether he was
7 aware of Evon Yu's contacts with Bruce Jeong, of HLDS, in
8 December of 2008. Isn't that correct?

9 MS. PALOZOLA: Object to form.

01:49 10 THE WITNESS: No, because I didn't know about
11 it.

12 BY MS. SCARLETT:

13 Q So have you taken any steps, as the corporate
14 representative, of Quanta Storage, testifying here today,
01:49 15 to determine the extent of contacts between Evon Yu, of
16 Quanta Storage, and Bruce Jeong, of HLDS?

17 MS. PALOZOLA: Object to form.

18 THE WITNESS: I didn't know. I didn't know
19 about this.

01:50 20 BY MS. SCARLETT:

21 Q That is not an answer to my question.

22 My question was whether you, as the corporate
23 representative of Quanta Storage, have taken any steps to
24 find out the extent of communications between Evon Yu, of
01:50 25 Quanta Storage, and Bruce Jeong, of HLDS?

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01:50 1 MS. PALOZOLA: Object to form.

2 THE WITNESS: I didn't know about their contact,
3 so how could I have taken any steps?

4 BY MS. SCARLETT:

01:51 5 Q Do you understand that appearing as a corporate
6 representative here today, you had an obligation to
7 undertake some investigation to testify on behalf of the
8 company as a whole and not just from your individual
9 memory?

01:51 10 MS. PALOZOLA: Object to form.

11 THE WITNESS: I don't know.

12 BY MS. SCARLETT:

13 Q You're not aware that you had an obligation to
14 perform some research to testify here on behalf of Quanta
01:51 15 Storage today?

16 MS. PALOZOLA: Object to form. Misstates
17 testimony.

18 THE WITNESS: I'm here to testify what I know.

19 BY MS. SCARLETT:

01:52 20 Q When we started this deposition, I showed you
21 the first exhibit, which was marked as 2122.

22 Can you pull that out again?

23 Do you recall seeing this exhibit at the
24 beginning of your deposition?

01:54 25 A Yes.

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01:54 1 Q And you understand that you're here to testify
2 on behalf of the company, Quanta Storage, Inc. Isn't
3 that right?

4 A Yes.

01:54 5 Q And did you understand that you had any
6 obligation to investigate and educate yourself on the
7 topics that are outlined in attachment -- I'm sorry -- in
8 Schedule A to this deposition notice?

9 MS. PALOZOLA: Object to form.

01:55 10 THE WITNESS: Yes, but this is not our document,
11 so how could I know about it?

12 And this was written in Korean. And how do I
13 know if the English is accurate?

14 And if it's something that I am aware of, of
01:55 15 course, I would investigate. But if it's not something
16 that I'm aware of, how could I think of investigating?

17 BY MS. SCARLETT:

18 Q But you understand that you're here testifying,
19 not just based on your own individual knowledge but on
01:55 20 behalf of a company; so, for example, Exhibit 408 has a
21 message from Evon Yu, where the first sentence is, "I
22 just called HLDS Bruce."

23 Do you recall just looking at that exhibit a
24 minute ago?

01:56 25 MS. PALOZOLA: Object to form.

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01:56 1 THE WITNESS: Yes.

2 BY MS. SCARLETT:

3 Q So I'm trying to understand what steps you took
4 as the corporate representative of Quanta Storage to
01:56 5 investigate and educate yourself to understand the extent
6 of contacts between Evon Yu, of Quanta Storage, and Bruce
7 Jeong, of HLDS.

8 MS. PALOZOLA: Object to form.

9 THE WITNESS: First, I didn't know that Evon was
01:57 10 in contact with Bruce, so I could not -- so I could not
11 have asked Evon or Haw Chen, even though Haw was listed
12 as a recipient in the e-mail.

13 BY MS. SCARLETT:

14 Q But you were certainly aware that Evon Yu had
01:57 15 met with Bruce Jeong at least once, because you attended
16 the same dinner on October 15, 2008. Isn't that right?

17 MS. PALOZOLA: Object to form.

18 THE WITNESS: Yes.

19 BY MS. SCARLETT:

01:58 20 Q So despite knowing that Bruce Jeong, of HLDS,
21 and Evon Yu, of Quanta Storage, had met each other at
22 least once, you, as the corporate representative of
23 Quanta Storage, took no steps to investigate what further
24 contacts there were beyond that dinner. Is that right?

01:58 25 MS. PALOZOLA: Object to form. Misstates

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01:58

1 testimony.

2 THE WITNESS: So I don't know if I'm supposed to
3 investigate every -- everything -- I don't know if I'm
4 supposed to investigate as long as -- every time there's
01:59 5 a dinner. Plus, Evon has left the company.

6 Whatever I know, I have provided.

7 BY MS. SCARLETT:

01:59

8 Q And did you ever ask Sally Huang, who also
9 attended the October 15, 2008, dinner with Bruce Jeong,
10 of HLDS, whether she had further contact with HLDS Bruce
11 after that dinner?

12 MS. PALOZOLA: Object to form.

13 THE WITNESS: No, because Sally left, too. So
14 there's not a way for me to ask her any more.

02:00

15 BY MS. SCARLETT:

16 Q And Sally left just a year ago. Isn't that
17 right?

18 A Yes.

02:00

19 Q And Evon Yu left approximately a year ago as
20 well?

21 A Yes.

22 Q Are you aware of a meeting where Sally Huang met
23 with Tango Lin, of Yosun, and Bruce Jeong, of HLDS, at
24 the same time?

02:02

25 A You mean at the same time?

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02:02 1 Q Yes.

2 A No, I am not.

3 Q Are you aware of whether she ever met with Tango

4 Lin, of Yosun, separately from Bruce Jeong, of HLDS?

02:02 5 MS. PALOZOLA: Object to form.

6 THE WITNESS: I don't quite understand your

7 question.

8 I have listed here the meeting between Sally,

9 Evon, and Yosun Lin -- or Tango Lin, at Yosun. That's

02:02 10 what I know.

11 BY MS. SCARLETT:

12 Q And you believe there was only one meeting

13 between Sally Huang, of Quanta Storage, and Tango Lin?

14 A As far as I know.

02:03 15 Q And how do you know that that meeting occurred

16 on December 12, 2008?

17 A I asked Sally and she told me.

18 Q When did you ask Sally?

19 A I don't recall.

02:03 20 Q Why was it that you had the occasion to ask

21 Sally about her December 12, 2008, meeting with Tango

22 Lin, of Yosun?

23 MS. PALOZOLA: Object to form.

24 THE WITNESS: I had known about this event

02:04 25 previously, before Sally left. She told me about it, so

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02:04 1 I included. I took note about it.

2 BY MS. SCARLETT:

3 Q When did she tell you about this meeting?

4 A I don't remember.

02:04 5 Q Did you have only one conversation with Sally
6 Huang about this meeting?

7 A Yes.

8 Q Did she provide you with any details regarding
9 this meeting other than the date of the meeting?

02:04 10 A No. She just told me it's marketing information
11 sharing.

12 Q Did you ask her for further details about what
13 specifically she meant by marketing information sharing?

14 MS. PALOZOLA: Objection. Form.

02:05 15 THE WITNESS: No. At the time, I just took
16 note -- I just took simple note.

17 BY MS. SCARLETT:

18 Q Did you ask her how long the meeting lasted?

19 A No.

02:05 20 Q Did you ask her whether they discussed specific
21 customers?

22 A No.

23 Q Did you ask her who attended the meeting?

24 A Who, you mean what -- what do you mean by "who"?

02:05 25 Q Well, on this chart, you listed Tango Lin, of

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02:05 1 Yosun, and Sally and Evon, from QSI. Is that right?

2 A Yes.

3 Q Did you ask her -- did that information come
4 from Sally Huang?

02:06 5 A In my recollection, yes.

6 Q Did you ask her whether anyone else attended,
7 other than those three people?

8 A No, because she told me about -- she told me
9 that these were the three who attended.

02:06 10 Q Why do you list all MSI suppliers and MSI staff
11 underneath that?

12 A I think it may be a copy-and-paste error.

13 Q So all MSI suppliers and MSI staff did not
14 attend the meeting between Tango Lin, of Yosun, and Sally
02:07 15 and Evon, of QSI. Is that right?

16 A Correct.

17 Q And when you were discussing this December 12,
18 2008, meeting with Sally Huang, did you ask her whether
19 or not she had any other contacts with Tango Lin, of
02:07 20 Yosun?

21 MR. McSHANE: Object to form.

22 THE WITNESS: No.

23 BY MS. SCARLETT:

24 Q And is that the only occasion that you had a
02:08 25 conversation with Sally Huang regarding her contacts with

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02:08 1 other ODD suppliers?

2 MS. PALOZOLA: Object to form.

3 MR. McSHANE: Misstates her testimony.

4 THE WITNESS: Correct, in my recollection, yes.

02:08 5 BY MS. SCARLETT:

6 Q So when was it that you prepared the first

7 version of the chart that we see marked in Exhibit 2123?

8 MS. PALOZOLA: Object to form.

9 THE WITNESS: I don't recall. I don't recall.

02:09 10 BY MS. SCARLETT:

11 Q But it seems clear now that you prepared at

12 least one version of this chart before Sally Huang left

13 Quanta Storage. Isn't that right?

14 MS. PALOZOLA: Object to form. Misstates her

02:09 15 testimony.

16 THE WITNESS: Yes. And after that, if I had

17 further information, I added.

18 BY MS. SCARLETT:

19 Q So that means you also prepared this version of

02:09 20 the chart before Evon Yu had left the company. Is that

21 right?

22 MS. PALOZOLA: Object to form. Misstates

23 testimony.

24 THE WITNESS: The first draft, maybe. I'm not

02:10 25 quite sure of the time point.

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03:03 1 when she wrote "H company" on the phone?

2 MS. PALOZOLA: Objection. Form.

3 THE WITNESS: I said, I'm not sure.

4 BY MS. SCARLETT:

03:03 5 Q Had you, at any point during your employment at
6 Quanta Storage, had a conversation with Virginia Lin --

7 MS. PALOZOLA: Object.

8 BY MS. SCARLETT:

9 Q -- about whether she spoke with competitors of
03:03 10 Quanta Storage?

11 MS. PALOZOLA: Object to form.

12 THE WITNESS: As -- like I mentioned yesterday,
13 I didn't remember the brief stint that Virginia Lin had
14 in the sales department. So I wouldn't have thought of
03:04 15 asking her about it.

16 BY MS. SCARLETT:

17 Q And how long was Caroline Lin in the sales
18 department?

19 A I'm not sure, but it should be longer than two
03:04 20 or three years.

21 Q And while you were employed by Quanta Storage,
22 have you ever had a conversation with Caroline Lin about
23 her conversations with competitors of Quanta Storage?

24 MS. PALOZOLA: Object to form.

03:05 25 THE WITNESS: Not specifically, no.

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1 STATE OF CALIFORNIA)
2)
3 COUNTY OF SAN FRANCISCO)
4

5 I, Lana L. Loper, a Certified Shorthand
6 Reporter, do hereby certify:

7 That prior to being examined, the witness in
8 the foregoing proceedings was by me duly sworn to
9 testify to the truth, the whole truth, and nothing but
10 the truth;

11 That said proceedings were taken before me at
12 the time and place therein set forth and were taken down
13 by me in shorthand and thereafter transcribed into
14 typewriting under my direction and supervision;

15 I further certify that, pursuant to FCRP Rule
16 30(e)(1), the review and signature by the witness:

17 ___ was requested by the deponent or a
18 party before the conclusion of the
19 deposition;

20 _x_ was not requested by the deponent
21 or a party before the conclusion of the
22 deposition;

23 I further certify that I am neither counsel
24 for, nor related to, any party to said proceedings, nor
25 in anywise interested in the outcome thereof.

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1 In witness whereof, I have hereunto subscribed
2 my name.

3
4 Dated: March 23, 2017

A handwritten signature in black ink, appearing to be "Lana L. Loper", written over a horizontal line.

5
6
7 LANA L. LOPER, RMR, CRR, CCP, CME, CLR, CSR 9667